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PART I. ORGANISM. PHRENOLOGY. The first principles of life. Its value and improvement. Nature is infinitely perfect. Life is Nature's most perfect work. Human life its highest form. Value of life and its functions. Its enjoyments measure its worth. Its inherent value is all its possible pleasures. Enjoying as we go. Natural laws, their existence and the rationale of causation. They embody the divine command. Happiness appended to their fulfilment. Pain to their violation. Each self-rewarding and punishing. Experience ever working and enforcing them. All sufferings turn all evils into good, and vices into virtues. Pain cures. All sufferings yield double pleasure. All should study them. Unnoticed law. All fluids move by rolling. Why? Electricity Nature's great motor and life agent. Effects all sidereal revolutions; ditto sensation and motion. Thermal alternations creates it. Is nature's great health restorer. Heat petrifies. How a California forest was turned into stone while standing. Pressure promotes action—circulation, muscles, nerves, &c. Promotes eye sight. Spectacles not necessary. **PHRENOLOGY.** Man the epitome of Nature. Mind do. of man. Each mental faculty adapted to an attribute of Nature. Analyzing mind, analyzes Nature. The mind a plurality of mental faculties. Six proofs: 1. Doing many things at once. 2. Partial genius. 3. Monomania. 4. Warring desires. 5. Dreams. 6. All things made up of parts. All functions manifested only by organs. All organic states affect functions. Value of good bodies. Rich dresses on poor physiques. Keep body in good working order. **BRAIN.** Organ of mind; do. of body. Its states control all mental, all physical functions. Value of good brains over poor. The mental function executed in *grey*, its gelatinous surface. Vibration, its mode of action. Proof, the nervous system begins and ends in it. White brain matter composed of transfer nerves. Seat of the soul. Consciousness. How nerves act to carry on life and sensation. Skin. How pleasures and pains are caused. Nervous paralysis. Amount, cause, cure. All painful action impairs, pleasurable improves organs. Bodily impairments create sinful proclivities. Strong bodies necessary to strong minds. Materialism. Brain composed of as many organs as mind of faculties. Size indicates power. Strong faculties have large; weak, small organs. Ditto, cause different shapes, which indicate differing characters. How Phrenology was discovered and founded. Human and animal brains contrasted. Attestations. Objections. Mind shapes body and brain. Organic quality. Fine and coarse blood corpuscles. Form indicates the three temperaments—Vital, Motive, Mental. What mental characteristics each produces. Their combinations. Their balance best. Signs of character, complexion, voices, tones, eyes, beauty, walk, resemblances to animals, natural language, &c. Self-perfection. Proportion, normal action, &c. Culture enlarges and strengthens. Self-knowledge. How to excite Faculties, &c.

PART II. HEALTH Life's first pre-requisite. Amount attainable. Restorable. A duty. Sickness sinful. Life's functions. **VITALITY** first. The Will cure. **RESPIRATION.** Oxygen. Doubled by diaphragm breathing. The lungs. Ventilation. Blue veins. Stooping. Breathing propels the blood. The breath cure. Prevention and cure of consumption. **FOOD.** **APPETITE** and smell should select it. Man omnivorous. Cookery. Unleavened bread. Fruits, sweets, pastry, milk, &c. Mastication, quantity, &c. The digestive process. Stomach and liver. Constipation, prolapsus, dyspepsia, how caused and cured, &c. **FLUIDS.** The blood. Drinks. Soft water. Tea, coffee, alcoholic and malt liquor hankerings, and their cure. Tobacco. The heart, kidneys, glands, excretions, &c. The skin. **ANIMAL HEAT.** Fire, clothes, the feet. Colds, and their cure, &c. **SLEEP,** its uses, times, promotion, &c. **BONES,** muscles, the exercise cure &c. **NERVES.** Insanity and its cure. Hydrophobia, electropathy, coldpathy, sun and earth pathies, &c. Cure of asthma, inflammations, rheumatism, neuralgia, burns, wounds, tumors, &c. 21. Health rules. What is as practically important, throughout all the pursuits of life, as a good, sound constitution, that base of all terrestrial functions and enjoyments? What are riches and honors, what is even life itself, without health? What is the value of a robust *family* over a sickly one? And how *horrible* is premature death!

PART III. THE FAMILY. CREATIVE LAWS render all the functions of all that lives *just* what they are, thus proffering mortals the sublimest utilities of the universe; which all parents can and should learn and apply to the illimitable improvement of all yet unborn. How foolish, wicked, even *accursed* to produce few, poor, satanic young, instead of many good angelic darlings! Good Lord! How long shall men ignore or taboo such infinite eventualities?

THIS BOOK UNFOLDS this parent-and children-perfecting theme *scientifically*. How exalted its mission! What soul but must clutch this its natural-laws exposition! Along with its analysis of male and female perfection.

LOVE is God's creative agent, and wields absolutely sovereign power over every parental iota; else how could it transmit all? Just think, O reader, how many of *your* virtues and vices, pleasures and pains spring from your *own* affectional and sexual states: yet none trace a thousandth part to this their great controller. Tremble as you here behold *how and why* LOVE is the tyrannical Autocrat of all men, all women, so as to perfect their children; and also *what* love states to secure, and avoid.

A HAPPY FAMILY is earth's only paradise, a miserable, like being chained to a putrifying carcass. To secure a "controlling interest" in the former, and avoid "sharing the latter, is rendered easy and sure, by learning and fulfilling Nature's love laws, here expounded thoroughly and philosophically.

NATURE'S CREATIVE EMBRACE is the soul of man, woman, Love, marriage, the family, reproduction, and whatever else appertains to either; and that for which each was created: Hence *its* being right or wrong, perfect or imperfect, renders them equally so; besides making every offspring precisely what it is: whilst most conjugal and sexual ailments and immoralities originate in its errors, and marital virtues and enjoyments in its right fulfilment.

IT HAS ITS NATURAL LAWS, which all its participants are sacredly bound to obey. *Their violation*, not "Adam's fall," causes most of man's "total depravities;" whilst their fulfilment would soon *regenerate the race*: nor can man be essentially improved but *through it*.

A KNOWLEDGE OF ITS SCIENCE thus becomes as infinitely important as are sexual perfection, conjugal felicity, and perfect children—man's three dearest interests; which it governs.

BEING SEXED GIVES THE INHERENT RIGHT, even makes it our solemn duty, to know its natural requirements *beforehand*; else how can we fulfill them?

WOMAN needs this knowledge most; because Nature installs her queen over this whole creative domain; and a sudden marriage may any time demand its fulfilment. Its *right* use enables any and all

Prospectus, containing the opening chapter only



ITS

FACTORS AND IMPROVEMENT:

INCLUDING

PHRENOLOGY,

ITS PRINCIPLES, PROOFS, FACULTIES, ORGANS, TEMPERAMENTS AND TEACHINGS

APPLIED TO

PHYSIOLOGY,

AND HEALTH; ITS VALUE, LAWS, RESERVATION AND RESTORATION.

MENTAL SCIENCE,

SELF-CULTURE, PHYSIOGNOMY, SOCIETY, COMMERCE AND GOVERNMENT.

A PERFECT FAMILY,

MAN, WOMAN, LOVE, MATING, MARRIAGE, PATERNITY, MATERNITY, INFANCY, REARING AND HOME.

INTELLECT,

MEMORY, EDUCATION, THE SENSES, ARTS AND SCIENCES.

GOD,

HIS ATTRIBUTES, WORKS, WORSHIP AND NATURAL LAWS. AND TO

IMMORTALITY,

ITS EVIDENCES, RELATIONS TO TIME, AWARDS AND SURROUNDINGS, WITH DUTY, SIN, REPENTANCE, PARDON, FAITH, PRAYER AND ETERNAL PROGRESS.

"Being old while young, makes young while old."
"Study and follow Nature."

EMBRACING ALL HIS WORKS REVISED.

BY O. S. FOWLER,

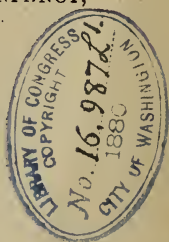
Author of Fowler on "Phrenology," "Physiology," "Self-Culture," "Memory," "Religion," "Human Science," "Sexual and Creative," "Self-Instructor on Phrenology," Etc., Etc.

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To my
Darling Grand-Son,



O. S. Fowler Austin,
and
Rising Generations,
I dedicate this Book,
with these sacred injunctions:-
Follow its Teachings,
&
Disseminate its Truths.
O. S. Fowler.

753 Broadway
New York City 1880.

PREFACE.

MAN IS THE EPITOME OF NATURE. All her laws and facts are embodied in him; along with all her arrangements, causational, composital, electrical, gravital, optical, mechanical, periodical, reproductive, and every other; so that,

Anthropology teaches universal truth by expounding human nature throughout all its Factors and ramifications; and as such has no equal in practical importance, and inherent value—as far surpassing all other studies as her subject matter, Man, transcends all else terrestrial. His

Mentality alone constitutes his component essence, his life force; alone enjoys and suffers; feels, thinks, and acts; is the summary of Nature; lives forever; and is Jehovah's crowning work. All human interests originate and converge in this their focal center. This renders

Mental Philosophy the embodied summary of all science; the philosopher's crucial test of all doctrines, all practices, educational, commercial, social, governmental, moral, religious, and all others; as well as of universal humanity, throughout all times and conditions; and has therefore justly engrossed the master intellects of the whole race.

Its scientific analysis, as of all else, alone reveals its nature, laws, uses, ways, means, ends, functions, right and wrong action, and whatever appertains to man; which makes it the chief Factor in anthropology.

Every other exposition of mind utterly fails, each showing how faulty all; nor can any definite idea of its elements or outworkings be obtained from them all; because none correctly analyze its component Faculties, the sole Factors of humanity; whereas

Phrenology gives this analysis; thereby enabling us to identify and describe each, along with all their outworking ramifications, by sight, touch, and experiment, those infallible tests of all truth; and hence alone deserves the exalted title of Mental Science.

Its discovery is far the greatest and most useful ever made, completely overshadowing steam, machinery, telegraphy, and all other modern improvements, by unfolding Creation's sublimest department, *Mind*, in which existence itself inheres, and from which emanate whatever all living beings do and are; thereby seizing the life entity itself at its center, and ramifying it through all its outworking operations. Nothing but

This mental analysis teaches a right life, that most exalted attainment possible to men and angels. Just how to live—what we should do here, and not do there; what is right, and what wrong, and why either, and

how to direct our steps accordingly through all our daily feelings and doings, are problems perpetually recurring, and demanding practical answers every passing moment; so that some infallible tribunal for their prompt and correct adjudication is infinitely important as our sure guide from all wrong and misery, to all virtue and happiness. Just how to derive from life all its possible goods and enjoyments, and avoid all its evils and sufferings, is the master problem, as yet unsolved, and should be the chief study, of all human beings; as it is the highest aspiration and first instinct of all sentient life. Hence the scientific analysis of these Mental Faculties, by teaching all this, ranks all other subjects in practical importance and profound philosophy. Only

Phrenology supplies this analysis, and thereby reveals all their right and wrong, virtuous and vicious, pleasurable and painful, modes of action; besides describing the perfect man; thus showing all persons, all communities, just wherein and how far they conform to this standard, and depart from it; that is, whether and wherein each is doing and feeling right and wrong.

A science which does all this must soon become the great study of the race, and so continue till "time shall be no longer."

A standard work on this mental science, which analyzes its Faculties, unfolds its principles, classifies its facts, gives its history and recent discoveries and improvements, and embodies the gist of all its previous writings, with whatever is known concerning it, is an unequalled public and private benefaction.

Gall, one of this world's greatest men, discovered its basilar fact that each mental Power manifests itself only through its specific cerebral organ, the size of which, other things being equal, indicates its functional efficiency, along with the location of most of them, yet did little toward developing this science as such; and *Spurzheim*, a close observer and deep thinker, added to *Gall's* discoveries, made important improvements, and wrote valuable works on *Phrenology* itself and its applications to Education, Insanity, the Natural Laws, etc.; while *George Combe*, one of the very greatest and best men of his own age or any other, super-added to those of both, and wrote those masterworks, the "Constitution of Man," "Vestiges of Creation," and many others; and the Author has contributed, let others say how much, toward developing this all-glorious science by his various works, partly enumerated above; and yet all these, along with all its other writings, are fragmentary; whereas the best interests of mankind demand a comprehensive and complete exposition of both this science itself, and all its teachings, and applications to all the varied departments of humanity.

Man must be investigated as one great whole, because composed of many co-ordinate parts and functions, each working in conjunction with all its others; so that, as studying a very complex machine requires scrutinizing each of its parts as *co-working* with all; so man must be studied as a unit, not in fractions. Only this *unitarian* aspect of *all* the departments of his most elaborate nature as *co-operating* with all the others, is of much practical value; whereas hitherto he has been expounded in isolated sections—by anatomists merely structurally, physiologists purely functionally, metaphysicians solely theoretically, theologians wholly spiritually, worldlings simply practically, and therefore by all fragmentarily—one devoted to one, another to some other, set of his bodily

organs, or to one or another remedial, or dietetic, or sectarian idea or dogma; or else to Education, or Marriage, etc.; quite like a fly seeing only his corner of one room in this vast Temple of Life, but none even attempting to discuss him as a complete *totality*. What could we learn about the heart, or lungs, or stomach, or muscles, or brain, or nerves, etc., without examining them all *together*? Then how futile this discussing man's body without reference to his mentality? Or his religious nature apart from his physical, or intellectual? Or either irrespective of his social? Or any one apart from *all* the other departments of his complex being? Preposterous, all such attempts.

This work expounds man collectively. What department of human interest does it omit? Let its "Contents" answer. Would you learn his organic structure, find it here; and each part as *interrelated to all* parts; each bodily function as affecting, and affected by, all his intellectual, moral, affectional, societary, etc. This *curriculum* of its subject matter challenges special attention. It obtruded itself upon the Author by his being obliged, while revising each of his works, to quote or refer in each to subjects discussed in others; which induced him to embody them all into this one comprehensive volume, and thus treat all branches of Anthropology together. Its subject matter naturally divides itself into these SEVEN PARTS:—

PART I.—THE ORGANISM, AND PHRENOLOGY—discusses man's organic relations; analyzes the fundamental conditions of life, its temperaments, organs, and powers, together with their phrenological, physiological, and other modes of manifestation, etc.; and applies all to self and human improvement.

PART II.—PHYSIOLOGY—analyzes his physical functions, describes and illustrates their anatomical organs, and applies all to HEALTH, its value, laws, means of preservation and restoration, etc., and shows all how to get and keep themselves and families well without doctors or medicines—a boon how almost infinitely great—besides analyzing the self-caring Faculties, called Animal Propensities, which look after our physical and personal wants. Thus Appetite selects, eats, digests, and appropriates food; so that whatever involves alimentation, dyspepsia included, is here grouped around this mental nucleus, where alone it can be discussed practically or scientifically. Every other physical organ equally with the stomach, has its own mental Faculty; so that we treat whatever concerns breathing, consumption included, under respiration, etc.—a specialty unbiased readers will prize, even though medical professors criticise. Since each bodily organ was created solely to express its own mental Faculty, why not investigate together what Nature thus unites? We followed this fragmentary plan until our totality doctrine taught us this better way.

PART III.—THE FAMILY—discusses man's *affectional and domestic* relations, especially as carrying forward Nature's most important department, Reproduction, the means of all life and happiness; besides unfolding *creative and family science*. As a power over man, individually and collectively,

The family has no peer; for it is the foundation of all human society and institutions; the source of all laws and customs; the crowned head of all governments; the chief instructor of all nations; the inspiring motor of all commerce and industries; the sacred vestibule of all religions; the

heart's core of humanity ; and Nature's prime instrument of all the powers and virtues, joys and hopes, and very existence of the race itself ! All human interests, throughout all their ramifications, spring from this their fountain head, and all determining condition. A right family makes its possessors virtuous and superlatively happy, and a wrong, the converse ; besides giving a "sweet home," or a wretched.

It has its science, or laws and right management ; following which insures perfect family felicity. Then

Where are its laws expounded? Mostly ignored by pulpit, press, rostrum, novels even, yet completely unfolded by Phrenology. Ardent, marriageable youth are taught all other knowledge but this, thus being compelled to act blindly in this the casting die of life. Searchers after marital and domestic felicity, find their scientific exposition here. As

The central crown of every subject, like that of every vegetable, whence all its roots descend, tops ascend, and products emanate, pre-determines whatever appertains to it ; so *Love* is this reproductive crown, gender its trunk means, and perfect men, women, and children its most glorious products ; and this book, by analyzing it, reveals Nature's code of laws for originating life ; and institutes her supreme tribunal for adjudicating whatever appertains to each family member separately, and all collectively ; together with all their mutual "rights," wrongs, treatment, spheres, perfections, government, education, and all their interrelations. Oh, what it is to become a perfect man, "God's noblest work," or woman. His loveliest, and have perfect children, His dearest—three superlative blessings. Yet this requires that definite knowledge of their *elementary attributes* created by this love Faculty which alone makes them husbands and wives, parents and children. In this analysis, behold all human passions and desires, physical functions and mental Faculties, and whatever constitutes and concerns humanity, bound hand and foot to the triumphal car of this "master passion"—they its humble vassals, it their imperious autocrat. This Part also expounds the components of masculine character and perfection, and feminine beauty and loveliness ; gives the signs of existing paternal and maternal states of vigor and health, or weakness and disease, together with Nature's mating laws, times, and requirements ; shows who may, and who must not, marry whom, and why ; what combining parental qualities yield superior, and what inferior, offspring ; how courtship should, but must not, be begun and conducted, and young folks treat each other ; what necessarily augments and deadens Love and conjugality, and how to so woo and wed as to make every honeymoon preface a honey married life ; gives infallible rules, following any of which, much more all, will prevent all conjugal discords, restore deadened affection, and redouble marital bliss at will ; shows who may, but should not, get divorced ; how and why exclusive Love yields a hundred-fold more hymenial luxury than promiscuous, and purity than lust ; what uniting laws and conditions enhance, and what diminish, progenal excellence and parental pleasure, and how parents can bring into being children vastly superior to themselves ; as well as how almost infinitely better is a good generation with a poor education, than the converse, and that it is to become the regenerator of the race itself ; tells woman her specific mission, and how, by right previous self-management, she can render her yet unborn extra robust, lovely, loving, moral, religious, commercial, mechanical, artistical, poetical, musical, rhetorical,

intellectual, philosophical, male or female, etc., at her pleasure, and so rear them as never to lose any, nor ever need a doctor; keep them too healthy and happy to cry by day or night; make the badness of vulgar playmates the very means of rendering her own darlings always better, never worse; secure their implicit obedience and unbounded affection; keep them from all juvenile vices, and inspire them to everything good; mold them just as she would have them; make the worst good, and good angelic, and pilot them safely through puberty, that blighting crisis of millions; render her home a paradise, husband true, and family perfectly happy; and is full of just that kind of knowledge needed by all matrons and maidens. In short,

A wrong Love is the trunk cause, and right the cure, of most human degeneracies, diseases, and miseries. Then behold here how to guide and keep it "in the way it should go"; make all "broken hearts" better than ever; preserve juvenile purity, and banish a great evil with all its woes from among men. How many soul-and-body crushing experiences will it prevent by guarding the young against all wrong, and guiding them into all right, love pathways? Will it not teach them love lessons they had better learn here, than from associates? for learn they must.

PART IV.—SELF AND HUMAN ELEVATION—discusses those aspiring, self-perfecting, man-ennobling, polishing, civilizing, æsthetical, poetical, artistical, ornamental, mechanical, architectural, histrionic, cosmopolitan, and like other Faculties whose organs are located in the crown and along the sides of the head, between the Physical and Moral Groups; and is full of self-and-society-perfecting suggestions and principles.

PART V.—INTELLECT, MEMORY, AND REASON—analyzes and shows how to improve and discipline the mind, and strengthen each intellectual Faculty. How much is a good memory of everything worth? How much have you lost by forgetting to say or do desired things at the right times? How much annual rental could business men, students, lawyers, speakers, etc., well afford to pay for a good one over a poor? This Part analyzes all kinds of memory and intellect, and shows how to acquire knowledge; prosecute a scholastic education, personal and juvenile; develop scholarship, eloquence, and sense, man's crowning capacities; and unfolds Nature's educational first principles. Training man's intellect will save him from all evils and vices, by showing him how much happier and better all become by obeying than violating the natural laws; as well as how to utilize Nature's provisions for our enjoyments.

PART VI.—MAN'S MORAL NATURE—analyzes those highest religious Faculties which ally him to angels and to God; puts him in relation with all the theological, spiritual, and ethical truth of the universe, including all the doctrines they teach, and practices they command; develop a complete system of natural theology; solve all mooted religious problems by scientific authority; and furnish an exhaustless fountain of religious truth.

Did all that is, come by chance? or

Exists there a Great Supreme Head of this stupendous universe? And if aye, what of His character, attributes, works, worship, and the allegiance due from man to his Maker? or, what is the true theology?

Is our death our last? or

Is man immortal? And if immortal, are this life and that to come

antagonistic? And if so, had we better forego terrestrial pleasures to gain celestial? Or are both but parts of one continuous whole? so that whatever promotes or curtails either, similarly affects the other? And if so, *What* life here best promotes, and what prevents, the best good of both?

What of faith, prayer, repentance, pardon, salvation, everlasting progress, and kindred doctrines?

These problems, O man, are the most practically important any can ever ask or answer, because there impinge upon them destinies farther reaching and more eventful than upon any others whatsoever—too important to be either ignored, or left to hypothesis, or to blind, often bigoted, and ever varying faiths. All should KNOW, none surmise. Nature can not have left these truths hidden, nor even obscure, but, instead, lights them up with the full-orbed effulgence of knowledge. Our having religious Faculties and organs proves that this whole department of Nature, like every other, has its natural laws, which reduce it to scientific certainty, and make morals and religion one of the exact natural sciences; so that there is no more need nor even excuse for past or present religious differences, than for arithmetical; for Nature proclaims all her theological laws and truths in and by the analysis and out-workings of these moral Faculties—here treated last, because located highest up, last to develop and die, and the great pre-determiners of all human interests.

In it behold religious science.

PART VII.—A RIGHT LIFE, individual and communitarian, applies all these laws and teachings to private and public, temporal and eternal improvement, by showing wherein these, those, and the other customs, and doctrines, and institutions harmonize and conflict with human nature, and hence *from* and *to* what they require to be changed and amended.

Phrenology thus becomes the great teacher of the race in each individual, and in all respects.

Eye-teaching engravings by hundreds illustrate all its parts and points, and so simplify and popularize Phrenology that all intelligent amateurs can begin and prosecute its study without farther aid, and connoisseurs find its deepest philosophies elaborated; along with a resumé of its former writings. No labor, no expense, have been spared to render it a standard work, presenting in one complete volume both its facts and teachings, and applying all to juvenile and self-culture, and a perfect human life—ends how exalted!

Each Faculty is described in seven degrees of power, which can be measured or graded by making 7 signify very large, 6 large, 5 full, 4 average, 3 moderate, 2 small, and 1 very small; which enables all those correctly marked in its table to read their mental specialties fully described throughout this book, business and marriage adaptation included; with directions for cultivating and restraining whatever requires either.

N. B.—*All the Author ever marked* can do all this, just by transferring their markings to this table.

Each of its new theories, that of vibration in particular, proving from their structure just how brain and nerves act in manifesting mind and sensation, and showing why this is pleasurable, and that painful, deserves close scrutiny as explaining the *modus operandi* of life itself; as does its

theory of organic formation, showing why and how these vegetables and animals have these, and those those, shapes and structures—why kangaroos are largest behind, and lions before; why whales have horizontal tails, and fish vertical; how each bone, muscle, and organ of each insect, animal, and person is fashioned just as it is; thereby giving the true basis of all anatomies, all forms, all physiognomies; as is also its theory that Electricity is Nature's great motor power—propels all stars, tides, winds, blood, etc.; so rotates all worlds, as to give each their days, nights, seasons, etc.; and executes all life's sensations, motions, etc. Its new theory of improving eyesight, and seeing and reading better up to ninety without glasses than with, besides showing all how to leave them off to advantage—worth thousands to all approaching fifty—that all pain both warns and cures, heals, restores, saves, and results only in goodness and happiness; that heat petrifies; that alternating between heat and cold is Nature's best cure; that all fluids move by rolling; that pressure promotes all functions; that the octal method of reckoning figures far surpasses the decimal, etc., etc.; each deserves special attention, and will yet command assent. Yet

One generation must come and go before these glorious truths will be generally accepted, or even fully understood.

Objectors to Phrenology are generally treated with that dignified silence justly due to their bigoted perversions; because proving its truth both refutes their cavils, and leaves them face to face with their Maker; as well as to that lasting public reproach which surely awaits their short-lived triumph. Would Gallileo, would the propounders of any new truth advance it by wasting on their narrow-minded opponents those precious energies needed for its dissemination? Phrenology is a natural truth, and will soon overwhelm all its opponents. Pseudo discoveries, antagonistic to Gall's, are ignored, because unreliable experimentally; yet all of his have proved themselves correct on four generations, and in millions of persons, of both sexes and all ages.

To our infinite theme a finite mind can not do justice, and may well feel abashed to enter where angels should hardly dare to tread, yet some one must at least try; for the entire race, in most individuals, when not making a complete wreck of this most precious entity, existence, falls greatly below its possible ends and attainments, just for want of that collective knowledge of its elements, organic relations, laws, and right management here propounded.

Finding so much fault with so many gives pain, yet, like those surgical operations which cause present agony only to prevent future, is rendered necessary by the descent of most existing ideas and customs from far before the dark ages; which must first be extirpated in order to put humanity on its natural laws base. Everything ancient deserves scrutiny, while the great utilities of all modern inventions and discoveries entitle this "new departure" from them to at least a favorable hearing; yet "nothing is set down in malice."

Philanthropy, not personalty, human weal, not self-interest, to do good, not gain popularity, inspire every sentence. And as brevity is the soul of authorship, it aims to

Pack the most ideas possible into the fewest words; is tersely laconic, often using that most expressive style the ablative absolute, unwisely ignored by moderns; caters to no epicurean literary fastidiousness, but

presents its facts, arguments, and thoughts as clearly yet succinctly as possible, using those short Saxon words which express its precise meanings; contains nearly one thousand essays on as many vitally important subjects, yet nothing the most refined should not learn, and parents teach their children, and the grown the growing; warns youth against youthful, and adults against adult, errors; asks no favors but scrutiny, and grants no quarter to old fogysim; seeks to reach the heads, and mold the manners, and brand its ideas right into the innermost souls, of each reader; assumes all the privileges inherent in a scientific exposition of man's entire nature and inter-relations; shows all how to carry their own and children's perfections, physical, intellectual, and moral, on and up to the highest point attainable; expounds Nature's deepest, grandest, richest, and most useful economies; and appeals to the hearts and the hard sense of all its advocates and disputants. Criticise its mannerisms ye who will, but its subject-matter merits the deepest study and reflection.

An imperious mandate issued fifty years ago from the Supreme Court of universal truth, and directed to me in person, hereby obeyed, compels all these utterances. Wherein they fail, discredit their authorship; succeed, accredit Phrenology. Humanity, receive or discard; and beneficiaries, talk and write it up, or turn its disseminating agents, and gratefully remember your benefactor.

May it improve every reader, and enhance the number and the inborn capacities and excellencies of God's children forever!

O. S. FOWLER.

753 Broadway, N. Y., 1880.

EXPLANATIONS.—*Superiors*, or figures above lines, corresponding with its numbered paragraphs, refer to ideas, thoughts, and principles previously presented, and save repetitions, yet enforce the point in hand. Thus "The Value of Life" is numbered 4, and referred to by placing 4 above the line, thus,⁴

The first words, in italics, of every paragraph express its subject or thought, and aided by these numbered headings, sections, and chapters, enable readers to glean each part in an hour; besides facilitating review. For "Contents" see cover; and, better read with the left hand on it.

Seven degrees of emphasis are used thus—the lowest is double spaced; the second, ditto, *with italics*; small capitals the third; ditto, long-spaced, higher yet; capitals the highest but one, and capitals long-spaced the highest.

Q, means querist or query; O, objection or objector; and A, answer.

PART I.—ORGANISM, PHRENOLOGY.

CHAPTER I.—THE FIRST PRINCIPLES OF LIFE.

SECTION I.—ITS VALUE, AND IMPROVEMENT.

I.—NATURE IS INFINITELY PERFECT, THROUGHOUT.

A perfect God created her, and impressed His own infinitely perfect attributes and entities upon her; and after her completest inspection, pronounced her "good." Then how can she be otherwise than absolute perfection, both as one grand whole, and throughout all her individual parts, as well as in all her mutual adaptations and inter-relations?

Her sun, how infinitely glorious, both *per se*, and in all his adaptations to all else in Nature!—rising, timing each moment of his eternal progress, and setting, to the fixed iota of each second, throughout all time! The perfect chronometer of our vast solar system! Subjecting every living thing, even all inert matter, to his periodic sway! Rousing all vegetable life to renewed growth by his vernal advance, and laying them down to rest by and during his winter solstice. Measuring each day and night, spring and summer, autumn and winter. Graduating his rays of light and heat from Aurora's glowing dawn, through sunrise and noon, to sunset and total darkness, lest abrupt changes blind all eyes, and alternately freeze and melt all that lives! Or

Are her earth, air, water, less perfect? Or her showers and flowers, oceans and seasons, trees and grains, fruits and vegetables? Or any one of all her beneficent arrangements for the comforts and luxuries of all her creatures? Or either of her laws? or their outworking results? Behold throughout all her causes and effects and the infinitudes of blessings thus conferred and philosophies thus evolved, the very acme of all His divine perfections embodied and promulgated!

O. "What! pain, destruction, and death perfections!"

A. Yes, each, among her greatest, as we soon demonstrate; besides also illustrating this great basilar truth throughout this work. Nor can one valid theoretical or practical objection against this perfection of Nature be sustained. In short, she is the embodiment of all truth, for what is truth but the soul of Nature? And what is Nature but the incarnation of truth?

2.—LIFE IS NATURE'S MOST PERFECT WORK.

She grades her products. All are good, yet some better than others, as man compared with fly, sun with glow-worm, etc. Unorganized matter is good, both in itself, and in supplying the basilar pre-requisites of life, yet greatly improved when transformed into organs; but that life entity which animates and uses them almost infinitely surpasses these organs themselves; which "return to dust" when it departs. "A live dog is better than a dead lion." Nature is ever struggling upwards toward life, and every form of life toward a higher. How vastly better be a gnat than pebble! Nature is always and everywhere practically demonstrating that all living entities surpass inert matter by crowding all her domains with all conceivable forms of life; letting living things lord it over unorganized matter, and use it at will; and all higher forms of life all below. Yet

Why argue this patent axiomatic law of all things?

3.—HUMAN LIFE IS ITS HIGHEST FORM.

Another obvious axiom. God gave man command over all beasts, fowls, fish, reptiles, sea and land monsters, and even over winds and tides, to make them waft great ships when and where he listeth; harness steam and lightning into his triumphal cars; discover, fashion, and use any and everything he can find any and everywhere within, upon, and above the whole earth, as he pleases. Behold him walking forth erect with majesty and power, and all other creatures forever bowed down as in abject submission and awe. Adjudged by their works, behold his in contrast with theirs—his useful machines, beautiful fabrics, stupendous palaces, ocean steamers, with their mud shelters, ground holes, rude nests, and utter want of tools, goods, and improvements: him reading, writing, enchanting with letters, speech, song; them only growling, lowing, piping, warbling: him ever inventing, originating, reforming; them mostly destroying. Compare his achievements with theirs. His lowest far above their highest. Are they beautiful, and not men, women, and children, immeasurably more? Who would, that could, change into a beast? Idiocy, even for an idiot. In any and all respects he excels all earth's other productions in aspect, looks, structure, range of capabilities, and enjoyments, and excellences as much as angels excel him; besides ever fitting himself for angelic life and bliss after death. Behold in him God's last and most perfect work! Summary of all! Anointed and installed as His terrestrial vice-regent and their supreme autocrat! Embodiment of all His divine attributes! Compendium of marvels! Epitome and ultimate end of all that is!

4.—VALUE OF LIFE, AND OF ITS FUNCTIONS.

To be or not to be, how infinite the difference! Better be a dog, a fly than nothing. Self-existence, how glorious a boon! Pearl of great price. That alone which imparts value to all else. How rapturously should every human being exult in possessing a body thus perfect, emotions so varied and intense, and intellectual Faculties thus numerous and powerful. None are as well off as those who have abundance of life force; nor any as destitute as those who lack it. Compared with it all else is "vanity of vanities."

How very few, among earth's teeming millions, at all realize what it is to live; or even to put forth any *one* of their myriads of functions! Sight, how wonderful, how precious a gift! Who among all its possessors at all realize what it is to be able to discern objects at a distance so inconceivably great that it takes light hundreds of years to come from them to us! Some a hundred and twenty million times larger than our whole earth; others infinitesimally small; and myriads at a glance, as grass-blades in a lawn, leaves in a forest; and all so perfectly. How immeasurable the amount of knowledge and pleasure it bestows! One shot tore out both of a hapless soldier's eyes: what pension could repay him? How priceless, how precious the gifts of hearing, tasting, feeling, breathing, moving, and all our other physical functions! How valuable is each? How much could any one who loses either well afford to pay for its restoration? Our mental powers far more valuable. How infinitely precious each of our family loves, conjugal, parental, filial! Our instincts, Appetite, Self-Defence, Ambition, Caution, etc.

Our intellectual capacities still more, which tell us all about Nature, her laws, facts, and sciences, including reason, God's supreme behest to man, which discovers and applies first principles and philosophies to promote human happiness, and avoid misery, and attain desired ends. Most of all, our angelic moral attributes, Justice, Kindness, Hope, Capacity to perceive, adore, love, and become like, our infinitely perfect Creator.

Behold immortality crowning all, and expanding and perfecting all forever! Verily, life is the emanation and highest creation of Divinity Himself. For it, ho all ye who live, love your terrestrial parents to death almost, nor let them want for anything you can supply, and praise God forever with your whole might, mind, and soul!

O Thou great Inventor and Bestower of existence, with all its capacities and functions, we fall prostrate before Thee for this infinitely glorious benefaction, such as only Thou canst bestow, and as far above what any monarchs can give as Thy throne is above theirs, and Thou art above them: and we consecrate our entire beings to Thee, in studying and obeying Thy natural laws, and making the uttermost possible out of this life entity!

5.—THE ENJOYMENTS OF LIFE ADMEASURE ITS WORTH.

Happiness is the only standard of all values whatsoever, inwrought throughout the innermost instincts of all sentient beings. Every recipient of life estimates all things as more or less valuable in exact proportion to the pleasures they yield. All prize and seek food, dress, sleep, money, and everything else, solely in proportion to the enjoyments expected or derived therefrom, and pay the more or less accordingly. An investment of one dollar which makes its investor happier than another of millions, is worth the more; and thus of every single thing to its every possessor. All human, all animal instincts are predicated upon this self-enjoying basis. Fish instinctively love water, toads marshes, crows carrion, lions raw flesh, bovines and equines grains and grasses, men and women each other, and all living things love whatever they love, solely because made happy, each by what it loves.

All Nature is ordained on this enjoyment-giving and loving basis, from sun to atom, throughout all her products. All instincts center in this their grand motor instinct; all ends in this paramount end. Solely to create and experience pleasure is every bodily organ, every mental Faculty, ordained—sight to enjoy seeing, and all those ends it is created to subserve; breathing in quaffing luxuriously heaven's exhilarating air, and in expending the vital force thus obtained; brain and nerves in making us inexpressibly happy in their action, and results; and thus of all other physical functions.

Each mental Faculty is expressly adapted to attain this natural end, and no other—Kindness to make all needy recipients of its behests happy in receiving, and all bestowers still happier in their bestowals; parental love in making parents happy in loving and caring for their children, and children still happier in being loved and cared for; Acquisition in getting creature comforts, and the other Faculties in enjoying them; Appetite in eating, and the whole being in expending its nutrition; Causality in both studying and applying causes and effects to obtain ten thousand joy-producing ends; Adoration in the act of worshipping, and in all those sanctifying influences divine love and worship shed throughout the soul; and thus of Friendship, Hope, Justice, all kinds of Memory, and every other part and Factor of body and mind. The needle does not point to its pole any more invariably than every element and function of man points to pure, unalloyed happiness, all happiness, and nothing else, as their only natural result.

Each person's actual amount of pleasure beggars all description, yet varies in each with the degree and quality of life force possessed. Thus a philosopher is worth to himself and fellows more than a thousand fools, because endowed with that much more of life entity, and that better in quality; while each person's worth varies at different times in proportion as each has the more or less, now than then, of this only enjoying entity.

To attempt an approximate estimate of its value from a few of its functions.

Sleep, how luxurious to those fatigued, yet restless? How much could such afford to give for one sound, sweet, soul-and-body invigorating sleep? Then how much is this sleeping *capacity* worth? "I would give a guinea for that hearty youth's appetite for his breakfast!" said a millionaire dyspeptic. "Well you might, for he enjoys his morsel better than you can your gold." The starving would pay hundreds of dollars for one "square meal" and get their money's worth; then how much more are good eating and digesting *powers* worth than poor? And how much more valuable a superb physique throughout, than one feeble and sickly? Cicero well says:—

"*Mental* pleasures greatly surpass physical." Then what is the grand aggregate value of all your emotional, and intellectual, and moral powers, added to all your physical, from birth to death? To all the joys of childhood and adolescence super-add all those half-frenzied delights taken in business struggles and projects, ambitious and other efforts, making money and using it, and crown all with the intense ecstasies of first love, marriage, children, home, friends, social position, study, worship, and all else included; verily, the sum total beggars all conception. Life can and should be one ceaseless round of ever fresh delights, so many and common that we overlook them. Yet all this barely begins to sum up the possible pleasures, and therefore worth, embodied in life.

6.—LIFE'S INHERENT VALUE IS ALL THE PLEASURE IT CAN GIVE.

None realize how much they do take in eating, nor take a tithe as much as they could; and would if their digestion were perfect, and Appetite always regaled with just what they like best. Think how much ecstatic pleasure you actually did take in your first love; yet you might have taken ten, fifty, a hundredfold more, if it had not been blighted or soured almost as soon as you began to taste its divine nectar. Instead, suppose you had known beforehand just how to perfect this element; had chosen the very one precisely adapted to your specific wants, and each had done just and only what completely filled and developed the other's love entity; had super-added all the soul-ravishing delights of just your desired number of *beau-ideal* children, in a home and surroundings precisely to your liking; had been highly respected and trusted among men; possessed enough, but none too much, of creature comforts and luxuries; been an honored member of your chosen church and social circle; enjoyed the books, teachers, literary, and other advantages required for your fullest intellectual culture; and completely developed every capacity and desire of your whole being all the way up from infancy, through maturity, to a ripe old age, every moment being crowded with every delight you loved best—

how happy in the total aggregate could you *then* have been? At least a hundredfold happier than you can imagine, because your enjoying capacities have been impaired that much.

O. "*Aye, but advancing age reverses this glowing picture.*"

A. "*Usually does, yet never need to. Hear that cherub child shout with merry glee. Yet age should advance his joys, step by step, with his capacities. How happy is that tottering boy in tottering! Yet how far happier in running? And ever redoubling, up to life's meridian. And still more so in the dignified ease and rest of advancing age. Life's whole policy, adaptations, and legitimate outworkings, are to render all just as happy as they can be and live.*" And all

Crowned with immortality, proved in Part V. to be an immortal reality, a necessary component of being itself; as well as that all the actual and possible pleasures of this life, compared with those of that to come, are as the mote to the mountain, inconceivable; as eternal experience will yet practically demonstrate to us all. Then, ho all ye who live, how much is your existence worth to you? And it is worth to others all the happiness you can give them.

O. "But from this subtract all actual and possible sufferings."

A. "Not one iota, for reasons given hereafter."

7.—ENJOY ALL YOU CAN AS YOU GO ALONG.

"*Let us live while we live,*" is the true policy of all existence; of which "give us day by day our daily bread," neither too much to-day lest it mold, nor too little to-morrow, lest we hunger, is one expression, and "give me neither poverty nor riches," another. The *passing* moment is the only one enjoyable, or ever enjoyed. *Now* is the only time the sun ever shines, or we live, or can enjoy. Even all anticipated pleasures are experienced solely in the present tense; and all those of memory are but repetitions now of those past. Then let us all adopt this first law of life as our rule in its management, by making the pursuit of present happiness our paramount object; as it is the instinct of all that lives. Those who enjoy the most best please their Creator by putting this His life-giving policy into practice. Let all make life one ceaseless round of enjoyments.

A *Hudson River philosophical epicure* complained to the dinner-ticket collecting steward that he had not made half a steamboat dinner.

S. "*You know my good reason, sir; the adjournment of a convention and its rush of a thousand extra passengers the very minute we sat down to dine.*"

E. "*That excuse is good for you, but utterly fails to satisfy my hunger.*"

S. "*Keep your ticket; it will pass next time.*"

E. "*Take it; I care nothing for dollars, of which I have plenty, while dinners are scarce, and precious.*"

S. "*You've dined a hundred times before on board without ever finding me short.*"

E. "Aye; yet I have enjoyed only *one* dinner each day, and can not afford to lose this."

S. "*I guarantee*, if you dine with me a hundred times more, you'll never find me short again."

E. "*Granted all*; but, sir, mark this—my enjoying every day's dinner herefore *and* hereafter of my whole life, *gains* me none, so that I can never make up for this one's loss."

His selfishness was despicable, yet philosophy good. Ponder well this underlying principle, and apply it to all life's possible enjoyments, from birth to death. Each of its seasons come but once, so make the most of it: the more so because the full fruition of each promotes that of all its successors.

Make children happy, for this develops their whole beings; whilst making them miserable impairs their life principle itself, and dwarfs their entire after-power to experience pleasures; which making them happy now, improves. So let that boy be a boy while a boy, because the more a boy during boyhood, the more a man he will be through manhood; and let that girl romp during her only Tom-boy season, for it neither lasts long, nor comes back to her; nor, if curtailed, can she ever become the complete woman, in body or mind, its full fruition would render her. A spring frost has nipped her budding blossoms, and forestalled their summer growth and fall fruitage; make the most of first love, for a possible rowen crop, better than none, is only third-rate; and thus equally of all life's epochs, days, and moments.

Overworking to-day to do or get this or that, is consummate folly and wickedness; for it cuts off power to accomplish and enjoy ten-fold ever after. Yet Americans are stark mad in their wild rush and pellmell scramble after some future good; whereas all should be content with only what they can enjoy getting now, as well as using hereafter. In short,

Squeeze the utmost pleasure possible out of every passing moment, and good.

O. "*This self-indulging* doctrine contravenes all restraints and discipline whatsoever of ourselves and children, even all law and order, and throws wide open all the flood-gates of all the appetites and passions; besides proffering a premium on unmitigated selfishness and unbridled lust. One equally subversive of public and private morality and good, could hardly be proclaimed."

A. "*Either God blunders in creating* this ruling passion for happiness, or you err in condemning it. Must all forever crush out this basilar instinct He implants in all? Our natural-laws' doctrine, next in order, shows that he enjoys most who best obeys God's laws; that is, goodness and happiness are like Siamese twins, linked indissolubly together, and ever proportionate to each other; as are also badness and suffering; which wipes your narrow, bigoted dogma right out; besides showing that self-denial antagonizes every primitive end and adaptation of universal existence."

SECTION II.—THE NATURAL LAWS; THEIR REWARDS,
AND PUNISHMENTS.

8.—THEIR EXISTENCE, AND THE RATIONALE OF CAUSATION.

Every effect has its specific cause, and every cause produces its own natural effect, and no other. This is proved by every fact in Nature, and a philosophical axiom so universally admitted as to need only declaration. All eyes see, all nerves feel, all life's experiences, even all inert matter, attest, and all Nature forever witnesses, this ubiquitous and eternal truth. Nothing ever transpires in the starry heavens above, nor upon or within the whole earth, except in obedience to their autocratic mandamus; and only as they direct. All stars whirl through their cycles, all motes of matter move, winds blow, tides flow, leaves fall, in abject subserviency to the tyrannical edict of gravitation. All forms of life and matter are swayed throughout by one or another of these unalterable laws, and every fact and operation of universal Nature obey their resistless edicts. They constitute her active force, her executive officers, her vital principle, her soul and quintessence, if not her very self-hood—for she is wholly made up of these laws, and their workings. They alone banish chaos, and create all certainty, all science—that embodiment of truth, that handwriting of the Almighty Creator upon all His works. They make all Nature scientific by reducing everything in it to certainty. Every natural science is but their creature and servant—that of chemistry consisting in those natural laws which govern all organic mutations and changes; of astronomy in those which create and regulate all astral movements; and thus of all the other natural sciences. They originate all power, and apply it to the production of all results. No change, no function, not one single operation in Nature but they create and regulate throughout. No department, no single function of the whole universe, but is governed by them. Even all "exceptions" are but the operations of some other laws. *All knowledge* consists only in knowing them, and the facts they create—all arithmetical knowledge in knowing numerical laws and facts—and thus of all knowledge and all science whatsoever. Even all poetry, art, taste, style, etc., are creatures and expressions of these identical laws. Therefore,

All are the more or less learned the more or less they understand these laws and their operations, even though they know not how to read; while all who do not understand *them* are practical ignoramuses, however well read in the dead languages, mythology, etc. In short,

All Nature consists in her ends, and ways and means of effecting them.

Causation must have its cause. A natural institute thus stupendous yet minute, rolling suns throughout illimitable space, while ruling every atom of matter throughout all its mutations from and to everlasting with absolute precision and sovereign might, must stand on some commensu-

rate platform, and effect some specific result even greater than itself; for every workman must exceed his tools. Then what stupendous, most exalted END. O God! dost Thou attain, greater, wiser, and deeper than this Thy cause-and-effect ordinance?

THE SUPERLATIVE HAPPINESS OF ALL 'THY CREATURES FOREVER—AN END GREAT AND GLORIOUS BEYOND CONCEPTION—AN OBJECT WELL WORTHY OF "OUR FATHER IN HEAVEN," AND THE GREAT FINALE OF ALL THAT IS!

By what commensurate means is this divine end attained?

BY APPENDING SPECIFIC RESULTS TO GIVEN CONDITIONS, and always like results to like conditions—*by making the same cause's always effect the same results*, and then creating volition in every living creature which enables each to compass, reach, attain, bring to pass, effect any specific ends desired by each, just by *putting into operation those means* which bring them about. Thus A. desires wheat, and gets it by doing what produces it; B. wants pears, and grows them by grafting or planting pear-trees; C. thinks an education would make him happy, and gets it by means of books, teachers, colleges, etc.; D. desires health, and guarantees it to himself by learning and using its means, and avoiding known causes of disease; E. wants to see, or do, or say, or hear, something far away, and goes there to do it. In short, this cause-and-effect arrangement enables each and all to bring to pass whatever each desires by using those specific means which effect the particular things wished by each. But for causation, none could ever promote their enjoyments, or attain any end, or do anything whatsoever; which would render life worthless. How could we make ourselves happy, or avoid being miserable, unless there pre-existed certain established antecedent and consequent conditions, using which always results in what makes us happy, and *vice versa*? Thus how could we ever feed ourselves if only stones nourished us one day, wood another, iron some other, and thousands of other things at random at as many different times? Whereas this cause-and-effect institute tells us just what will nourish and what poison us any and every day of life. If gravity caused these and those things to ascend, descend, move side-wise, forwards, etc., at random, how could we ever build, move, or do anything whatever? Whereas its always causing all things to gravitate downwards, enables us to attain pleasurable ends by millions, otherwise unattainable. If touching fire burned us at one time and froze us at another, and so of the other things at other times, we would never dare touch anything. If given agricultural conditions produced good crops here now, but none there then, we could never raise anything except by chance; whereas causation makes given conditions always produce the same effects; which enables all to raise good and avoid poor crops by using Nature's growth ways and means. But for these natural laws we could only passively enjoy and suffer whatever might happen to us;

whereas Nature achieves her one great end, happiness, by means of this most glorious institute of causation, which is to life what sun is to earth.

For it, ho all ye who live, SHOUT DIVINE HOSANNAHS FOREVER !

9.—THEY EMBODY THE DIVINE COMMANDS.

God ordains, signs, seals, and issues them to each of His creatures as His eternal edicts, His supreme will and testament, from and to everlasting, by subjecting all to their imperial sway. They constitute His standard scales of eternal justice, His code of universal laws, His ever-sitting tribunal for adjudicating and enforcing universal right, and His prison for punishing all wrong. They alone create all duty, all obligation, and that "higher law" which dominates over His universe; and are written into the very tenor of existence itself. Each being thrown over all, binds all to obey each. The decalogue is infinitely obligatory upon all forever, yet derives its binding force not from burning, smoking, thundering Sinai, but by their being a partial rescript of these laws, in which all right inheres, and by converse, all wrong; thereby alone constituting and declaring whatever is good and bad, right and wrong, holy and sinful, virtuous and vicious, pleasurable and painful, any and everywhere, forever. Yet their binding clause is *man's good*, not God's glory; He being as little affected either way by our fulfilling or ignoring them as sun by human wishes. So suit yourself about obeying or breaking them. Like all human laws they would be utterly useless and nugatory but that

10.—HAPPINESS IS ALWAYS APPENDED TO THEIR FULFILLMENT.

Behold in this the highest possible incentive to obey them. All naturally seek pleasure,^s and finding it only in their obedience, instinctively obey them to obtain it. Behold in this arrangement the most benign yet potent appeal of their loving Father to the strongest instinct of all His creatures to study and obey His commands; thereby rendering said obedience instinctive. How infinite the wisdom and goodness evinced in framing this divine ordinance! Also

Behold in it the precise measure of your own obedience and goodness, item for item, as even-handed as infinite Justice can determine. Measured like grain, behold here for every-kernel of either, one of the other. Not one iota of pleasure ever thrills any sentient creature but it comes through some law obeyed so that all enjoy the more or less, as they conform more or less to these laws; the power of each to enjoy being first estimated. Farther, herein each

Behold your means of rendering yourselves just as happy as you can be and live, throughout every life moment and function, simply in and by obeying all these laws. Oh, stop and think how glorious the end thus thrown within your grasp; and by a means still more glorious—obeying God's natural laws; that is, in and by being good—thus killing the two

birds of your own perfect happiness and goodness by this one stone of obedience to law. Even more,

Publicans and sinners learn sensuous lessons in this ordinance; for even all animal luxuries flow to each through this natural laws channel. And all

Love all these laws, both as your Creator's^o will, and your own self-interest. All shout forever with David, "Oh, how love I Thy natural laws! They are my meat and drink." "In them alone I live, move, and enjoy. Their Author is my author, and they are His rules of action imposed upon me forever." Let all seats of learning, all churches, all writings, all human institutions, resound chiefly with them, and all press all our energies into their study and fulfillment. Yet, after all, their happiness embraces only half of either their utility or enforcement; the other half being that

II.—ALL PAIN IS CONSEQUENT ON VIOLATING THESE LAWS.

God drives all from their violations by suffering, as well as entices all to their obedience by pleasure; and this motive is quite as potent as that.

Pain exists. Our whole world is brimful of suffering and woe. Pandora's box of all diseases is let loose upon man. He literally groans in poverty, wretchedness, heart-rending agony over the death of friends, companions, and children. Billions suffer beyond description, and millions enough to extort the wish that they had never been born, or that death would hasten to deliver them from what is still worse. Yet

Suffering forms no necessary part of Nature, or function of man. Teeth were not made to ache; nor lungs to torture us with their consumption; nor Destruction to devastate whole nations with carnage, besides all the horrors of battle-fields; nor Appetite to cause all the varied sufferings incident to indigestion and drunkenness; nor Ambition to torture the feet of Chinese ladies or waists of civilized fashionables; nor Self-Esteem to wade through fields of blood to thrones of despotism; nor Devotion to create all the abominations of Paganism and bigotries of Christendom; nor Parental Love to torture with inexpressible anguish at children's death; nor Constancy to weep distractedly over a deceased consort, perhaps in utter poverty and loneliness, while agonizing diseases prey on the bereaved's vitals while hanging over their own yawning graves. Nor is there any organ or function in man or arrangement in Nature, the normal outworkings of which are painful, or anything but pleasurable. Then why all this misery?

To teach and enforce Nature's laws by making pain consequent only on their violation. They must be taught and enforced somehow, or rendered nugatory and worthless. Their sole mission is to create that pure bliss appended to their observance, the most potent persuasive thereto their Inventor could devise; to which He adds a *dissuasive* therefrom equally

potent by appending suffering to their infraction. All instinctively abhor pain, and shrink from whatever causes it. Each law teaches, proclaims, and enforces itself both by the pleasures flowing from its fulfillment, and pains from its violation. What human law but has its penalty, and would be worthless without? No man, woman, child, king, aristocrat, or peasant ever broke, can ever break, any one law without suffering therein and therefrom. Learned and ignorant, great and small, Christian and infidel, prince and peasant, stand alike amenable to their rewards and punishments. Obey and enjoy, disobey and suffer, is their unalterable fiat to all forever. Their sovereign inflexibility serves notice on all never to dare transgress either. Nature is one ceaseless round of divine devices for promoting happiness, but this punishing all violations of her law with pain becomes the great teacher and moralizer of the whole human race in each of its members, and God's archangel of mercy. Then

All hail this institute of pain. How powerful and incessant a preacher of righteousness, and promoter of happiness! But for it how could we know whether or wherein we were bruising, or maiming, or destroying any parts of our bodies, or even killing ourselves? Whereas this sentinel stands ever on guard all over our bodies and minds, forever compelling us to heed its warnings, and stop farther self-injury. This device of attaching pain to the violation of His laws is as benign as that of uniting pleasure to their observance. With one, God is forever inspiring us to seek their enjoyments by observing them,¹⁰ and with the other, promoting this identical end by the terrible sufferings consequent on disobeying them.

12.—EACH LAW IS AUTOMATIC, REWARDS AND PUNISHES ITSELF.

God proclaims each law by appending its *specific* pleasure to its fulfillment, and pain to its infraction. In the very *way* ye sin ye shall suffer, and obey, enjoy; so that no mists, no uncertainties becloud any one of them. Ignorance of them is no excuse, because personal *experience* is their divine preceptor. Those who can not learn them from books and teachers *must* from perpetually *feeling* this kind of pleasure in and by fulfilling this law, and that of pain in violating that law: so that their knowledge is being ever *thrust* on all. Learned and ignorant are ever attended by this their ubiquitous monitor. Those without letters or teachers have no excuse, because they have only to note each thrill of pleasure, each twinge of pain, and ask themselves, "What causes them?" which their first instinct compels them to do perpetually. Those who obey the affectional laws, yet violate the dietetic, enjoy their families, yet suffer from dyspepsia, and *vice versa*. Those who obey the parental, enjoy by loving their children and rearing them right, but who break the conjugal by hating or wronging their consort, thereby enjoy in the former, but suffer in the latter, and the converse; yet would enjoy both if they fulfilled both laws. Mrs. A. thinks the world of her church, attending all

its meetings, and doing missionary work, and hence enjoys religion exceedingly; yet is sickly, and suffers inexpressibly from headaches, toothaches, neuralgia, etc., because she outrages the health laws; whereas if she obeyed both kinds of laws, she would enjoy in both respects, and be as happy physically as she now is religiously; and the converse. The checkered lives of many are thus accounted for. Observation will enable all to trace all their joys and sufferings up to their precise causes, and ever afterward promote the former by repeating their causes, and prevent the latter by avoiding theirs.

In the day thou sinnest thou shalt suffer. These Natural law accounts must be settled on sight. Nature always exacts pay *down*; yet often continues paying ever after. So run up no accounts in hopes of present credits and future payments. By this present pleasure and pain arrangement,

Each law is its own herald, court, lawyer, judge, jury, sheriff, and executioner; being omniscient and omnipresent to see that the last iota of desert are enforced, both ways. No "ends of the earth" are far enough off, nor any hiding-place so hidden, nor any one high or low enough to escape them. Obeying any one law a little gives a little or ten times more, that much more pleasure; and the converse as to pain and suffering; and both as accurately as divine scales can proportion them. Then as you love yourself, keep perpetually inquiring all through life,

What law obeyed gives me this pleasure; broken, that pain? and keep up this research till sure that you have found the true cause of each. Turn a natural laws detective, and follow out all hints and cues; thinking what the cause is *not*, as well as is. Nor need you have any doubt; for God thus makes them as patent as His sun. And when you have once found them all out, you can avoid all pain by avoiding its cause; and fill your whole being brimful of enjoyment, by observing them all. Herein

Behold your means of securing those precise kinds of enjoyments you relish best. As if, seated at your heavenly Father's table, loaded down with every luxury His Paternal head and heart could devise and procure, He thus hands you His "bill of fare," saying, "What will you have? and how much of each?" adding, "Eat on till you want no more." By obeying this law thus much, help yourself to so much of this kind of pleasure, and by fulfilling that law to that much, of that luxury. Which do you prefer? and how much of each?—family felicities? or commercial success? or ambitious honors? or carnal pleasures? or epicurean gusto? or fashionable notoriety? or æsthetic? or scholastic? or moral? or devotional? or what? Each help yourself. And if ever you see anything else you like better, *change dishes* by substituting other courses.

How vast the amount of enjoyment and goodness thus conferred on all Thy creatures through all time, all eternity! O what a motive for studying and obeying Thy commandments!

13.—ALL EXPERIENCES TEACH AND ENFORCE THESE LAWS.

God must publish all His laws somehow, to all His subjects, or be unjust for punishing all those necessarily ignorant of them; and brands them right into the innermost consciousness of all, philosophers and fools, learned and ignorant, by their every moment's experiences; so that learning them does not depend on education, but, instead, is compulsory. All do and must enjoy or suffer every waking moment, from birth to death, and much in unconscious sleep. Our pains are often so excruciating and pleasures so ecstatic as to compel our notice. Sensation is our most powerful sense, and the basis of all our other senses. As none can touch fire without knowing it, so all pains, sharp, chronic, and dull, compel notice, even when hardly realized; while all pleasures make themselves felt even unconsciously. There is that in both pains and pleasures which commands and *compels* cognizance.

"*Experience* keeps a dear school," but dolts will learn in no other, yet have to in this. Think how effective her teachings, and how little we learn from books in comparison. Who ever know much about religion, however well read in scholastic theology, any farther than they have "experienced" its spirit power infusing their innermost souls? And thus of the loves, etc. Two youth start together to fit themselves for store-keeping, one by learning all a collegiate curriculum can teach, the other by a store-keeping experience; which will succeed best? Are book-farmers half as successful as practical ones? or artisans? or speakers? Does studying poetry make poets? "Practice makes perfect." Experience is man's great teacher in all departments of life; but most in morals. "Burnt children dread fire," and sufferers of all kinds remember and instinctively shrink from their repetition. Swine will eat rum cherries but once. Cattle goaded once by a barbed wire fence can never be got near one afterward. The sagacious elephant, Romeo, once broke through a bridge by his ponderosity, and twenty years later could neither be forced nor coaxed upon it. All sentient life is constituted on this underlying principle of "live and learn." None can possibly live without learning in and by living. All who can and can not read can and must remember their own experiences, and those dearest bought the most perfectly. In short, learning from every experience is an inherent factor of all life. Learning what? These natural laws; that is, God's mandates; for they are just what every experience, every event of life, teaches.

Others' experiences, both good and bad, also teach almost equally with our own. What we see we know. Eyes are good schoolmasters. Behold all the experiences of all sentient beings forever proclaiming all God's natural laws to all throughout all His realms, from everlasting to everlasting, and all forever learning them! Behold this experimental preacher of righteousness and goodness as a natural laws Professor and Preceptor!

Behold the whole universe the school-house, and all the happiness experienced by all ever persuading all to obey and enjoy evermore, and all suffering forever dissuading every sufferer from sinning ever after.

Behold another Divine ordinance no less benign, namely:—

15.—SUFFERING TURNS ALL EVIL INTO GOOD, ALL VICE INTO VIRTUE.

This is its natural adaptation, and necessary result. All who suffer pain shrink from it, and seek out and avoid its cause. The stupider you are, the more suffering Nature must take to pound this law-obeying truth into you, and thresh out all sinful proclivities; but sooner or later give in, break down, you must; for God is He who chastiseth, and only to save you from future sins and suffering: and what He undertakes, He does effectually.

This principle overthrows Paine's logic, that “if God is infinitely good, and powerful, and wise, He could and would have excluded pain from His universe,” by showing that it is His most beneficent policy; making even His infinite Destruction subserve His infinite Kindness. This Divine policy shows that

There is no “bad, worse, worst,” but only “good, better, best”; that no evil ever was or ever can be without being turned right into a means of goodness and happiness by this Divine invention; that all things do and must work out only good to all, *volens volens*, whether they love God or not, have faith or lack it, are savage or civilized, in and by suffering begetting sorrow for it, and its cause, which makes all sufferers better, and resolves to “sin no more.”

Nature is thus ever punishing out all our faults, and making those who sin the most therefore the best. Christ's prodigal-son doctrine illustrates just this, and nothing else. His riotous living eventuated in “more rejoicing in heaven over one sinner that repenteth, than over ninety-nine just men who need no repentance.” High authority this, and stating this doctrine that all seeming evils work out only good as clearly and forcibly as only Christ could state it. The very “wrath of man shall praise God.” In this ordinance behold a higher phase of divine goodness than appending happiness to law obeyed! and pain to violated law. Then

All hail this punitive principle. Pain, all hail. What an institution of learning! How great a Preceptor in righteousness a dissuasive from all wrong, this moral disinfectant of the universe!

Even a personal devil, if one exists, by this law is made a missionary of virtue and happiness to each of his myriad victims by its overruling every twinge of pain he ever causes to make them the happier and better ever after; thereby compelling him to serve God by advancing the ultimate goodness and happiness of all His creatures! Even more of this Divine goodness yet.

14.—PAIN CURES. ALL SUFFERINGS YIELD DOUBLE PLEASURES.

All inflammations heal. All blood drawn from inflamed parts is full of fibrinous string; because inflammation dams up the blood and organizes its fibrin so as to use it in patching wounds and restoring lesions; thus healing in and by "*the very act*" of paining. All colds cure by ejecting from the system through lungs and head that refuse clogging matter which induces them by first hindering the circulation, as we show hereafter. All fevers are internal fires for consuming that waste matter which impedes the life force, and, rightly managed, leave all who suffer from them better for years. All neuralgia, rheumatism, aches, etc., burn up that morbid matter which causes them. All admit that all boils leave their victims better than they find them; and thus of small-pox, and all other cutaneous excretions. Fever sores are but the painful expulsion of morbid matter which would give greater pain if not ejected. When your head aches know that it is curing itself; but be alarmed when it feels numb. Those agonies which precede mortification are ordained to wake up the sufferer to do what will help it expel its cause; yet the moment it commences it both signs the patient's death-warrant, and stops all farther suffering, which would be useless. Fatal shots always benumb, and thus rob death of all its terrors; and all who die lose their sentient principle the more the nearer they approach to death; and we prove hereafter that the dying process itself is inherently pleasurable, never painful. God inflicts all suffering never for "*His own glory*," but only for our own good. Universal facts prove that this is the Divine policy throughout.

All mental sufferings cure their causes. Thus all love disappointments generate hatred for their ex-object, or else wean the broken-hearted from life, and help fit them for immortal joys: and thus of loss of friends by desertion or death, loss of property, fear, shame, and all mental anguish whatsoever. God's great actuating principle obviously is to make all His creatures happy, only happy, and that continually, physically and mentally; and the happier through all suffering than they could possibly be without it.

This "policy" operates by wholesale. All wars inflict untold individual agony only to effect a thousandfold more good, by breaking up some chronic wrong, and changing both belligerents only for good. One season of cholera or pestilence makes all beholding survivors search out and avoid their procuring causes; and this, of all other public evils, turned by this law into public benefactions. The determining principle is this:

Is pain curative? or is it vindictive? a blessing, or a curse? Our principle, that pain is a double good, teaches and enforces the natural laws, and then cures its own wounds, presents the Deity and His government in a light infinitely benign and all-glorious, in thus bringing all good out

of all evil, and defends them against all aspersions of vindictiveness inherent in its converse.

Behold these quadruple arrangements of natural laws' pain curative—*four times over*—happiness appended to their obedience, suffering to their violation, experience forever teaching them to all sentient beings, and persuading and compelling all to obey them, and thereby forever progressing in knowledge, righteousness, happiness, and goodness—forever advancing toward the Divine throne!

Behold the ultimate salvation from all sin and suffering *compulsory*, not voluntary; *thrust* upon all, not contingent on faith or works. Behold in these four Divine institutes God's infinite wisdom and goodness forever drawing and pushing every recipient of life on and up the plane of infinite progress in a knowledge of His laws and character and in eternal purity and happiness in conforming to them. Behold the God we worship, and adore Him with your entire being. O how good and great a God is God! Dispute this logic or this glorious issue of life to each of its recipients, any who can.

16.—ALL SHOULD STUDY ALL THESE NATURAL LAWS!

All knowledge consists in knowing them and the facts they create: therefore all students of science should make them their text-books. Every scientist should be a professor of this natural law, or of that. All preachers should preach and expound them as Divine commandments;⁹ all books make one or more of them their trunk subject, followed out through its branches to its utilitarian fruitages; all human laws should be but their outgrowth; all judgments but reiterations of their decisions; all religious creeds but their exponents, and all their disciples the living exponents of one law or another; and all studies grouped around this natural laws trunk—numerations as a natural law, and each arithmetical rule as its sub-law. Please note how this general plan would simplify, and utilize, and promote all forms of study. Would or would not such a "full course" fit students for life's struggles and duties far better than existing scholastic curriculums? besides teaching and enforcing morality, and promoting success. Why waste the precious time and sparse vitality of darling youth on the dead languages, or mythological vagaries? or on their own daily immoralities and nightly reveries? or on chewing or smoking? They would never break down in health, or violate any of the natural laws, if their professors taught and practiced them.

SECTION III.—SOME OF THESE LAWS, HITHERTO UNNOTICED AS SUCH.

17.—ROTATION THE LAW OF ALL FLUID MOTION. ITS RATIONALE.

A natural law, how stupendous an institute! Extending throughout all extent! Governing all other worlds equally with our own! Enduring

from and to everlasting! Controlling every function of its department with tyrannical sovereignty! An edict of the Almighty! Illimitably applicable to human weal! Thus

Gravity sways all the countless worlds existing throughout infinite space with giant power from their beginning; lords it over every single thing upon and within them all, and over every particle of matter they contain; helps every breather in both inhaling and expelling all the breaths ever drawn, besides lifting them to prevent their return; aids every motion and sensation; and is omnipresent, omnipotent, and eternal!

Discovering any law, how great a discovery! and applying any to any new use, as steam to machinery, electricity to telegraphy, every invention included, how great a human good! Those who do either, should want for nothing.

Only a part of Nature's laws have been recognized as such; every now and then others are thrusting themselves upon public attention. We propound four hitherto unmentioned.

All fluids move by rolling along, none ever by sliding. Note this universal fact first, next its reason. On a "cold, frosty morning," when the heat of ascending smoke makes a white fog which shows just how it moves.

1. *See all smoke ascend by rolling*, never by sliding up in straight lines—not here and there a rolling flake, but all around and all along its ascending column. Whether going straight up or obliquely, it moves only by rolling; and equally so of all bituminous smoke from locomotives, factories, rolling-mills, and all bituminous combustions. All burning bush, wood, whatever smokes, all conflagrations, great and small, equally illustrate this rolling law.

2. *All blazes twist* as they rise, and flake off into curling forks. None ever saw any blaze ascend in a straight shaft.

3. *All smoking volcanoes* conform to and illustrate this rolling, curling, twisting law. None ever rise in straight lines.

4. *All steam rolls* whenever passing from one place to another. See this great fact illustrated in every curl of every puff of steam from every single locomotive, whistle, and steam escapement whatsoever, both moving and standing. See all winds curling into all steam jets as they move along together.

5. *All steam from all heated animals*, manure heaps, and whatever gives off steaming perspiration, conform to and illustrate this great rotating law.

6. *All breaths rise spirally*, as seen in all the breaths of all breathers, whenever any fog, or atmospheric dust, or cold weather, enables us to observe its movements. Of course it moves thus at all other times.

7. *Air let loose under water rolls up* and this same principle gives it the spherical form, boiling and bubbling upward, never sliding like an arrow.

8. *All rifles carry* faster and farther than smooth bores, solely by their whirling motion displacing the air they pass through, in accord with this law; that is, pushing it one side easier by twisting than by shoving.

9. *All moving liquids rotate* onward. Pour together clear and muddy waters, or liquids of different colors, and see this great fact illustrated in every part of either while commingling with the other.

10. *All water runs in eddies*, and only by their means. Whoever saw it descend in straight lines? It undulates as it leaves your pitcher, and winds as it falls.

11. *All hot water boils* up in all vessels, great and small, at all times and under all circumstances. See it rolling along on a right hot stove.

12. *All liquid escapements twist* out, as from all faucets; never issue straight. On lifting the stopper from the bottom of your bowl, the emptying water whirls itself out, instead of sliding, and usually from right to left—the same way that vines climb—that is, against the sun, for the sun only seems to go from east to west because the earth moves from west to east—probably in obedience to another still interior motive law.

13. *All rivers roll over sideways*. Proved thus—all branches entering on their descending right sides have much deeper mouths than those on their left; because their rolling over digs out their right and carries the *débris* down, but partly dams up their left, so that it settles and becomes bars and shoals.

14. *More water runs out through a tunnel-shaped hole* than a straight, as every experiment proves; because the former facilitates this rotation and therefore exit. You who purchase water by the inch, try this tunnel-hole if you would play sharp on its seller, and profit its buyer.

15. *The tops of all liquids move the fastest*. Note these experimental proofs. Dust has settled on top of any liquid. Pour it out slowly and see the dust run off first. Cream has risen on top of milk, and runs off first when poured off slowly; and the more cream the slower poured.

16. *All rivers flow at their surfaces* mainly, and the slower the deeper down. All their ripples and eddies are created by this rotating principle; ripples being only horizontal, and eddies perpendicular whirls; the former over and over, the latter round and round. All see that this is the natural way all liquids move.

17. *All rapids boil* up as from great chaldrons, which they could not do if they slid down; and rise several feet higher on each side than in their centers, because their rapidest running top-water pitches down the most in their middle, which presses it up most at their sides.

18. *All water falls curl under*, as seen in all cascades, mill-dams, etc., and most perceptibly in Niagara Falls and Rapids; all above being rolled up into curves and waves, all below boiling, whirling, twisting. It curves over its edges and rolls down whilst falling, and boils up because it rolls down as it falls; and from both bridges and both banks from the begin-

ning of its rapids until it rolls out into Lake Ontario not one straight line in any part of its rushing descent.

19. *All sea-waves roll up on their beaches and rocks, and roll over in forming all their sea-caps.*

20. *Rivers must descend over rough bottoms and along impeding sides.* Now, sliding upon and past them, would greatly retard their waters, which would wear and gorge their channels, especially in all deep waters, the weight of which is immense; and this blocking up at their bottom would arrest their flow on top, and their friction almost dam them up, and flood and wash out all bottom lands; whereas their rolling over these rough places, and their top waters over their bottom, passes on an immense volume of water with the least possible friction, detention, and motive power.

21. *Wind by sliding over rivers, with over a ton's weight on each square foot, would almost dam them up when blowing up stream, empty them when blowing down, and press their waters up over their sides when blowing obliquely across them—all prevented by their rolling along over them; and thus of billions of lateral obstructions.*

22. *A foot jet of hot steam or smoke rises because light.* Now, if it slid up, it must meet a pressure of $15 \times 36 \times 12 = 6480$ pounds per foot, which would keep it down. With this proportionate pressure, what could lift our breath above our mouths? Yet if it stayed down around them, we must change our places at every breath, or suffocate at least when asleep, by re-breathing our spent and poisoned breaths—all obviated by their rising easily by rolling up.

23. *All molten metals roll along when they move.* Who ever saw quicksilver slide along without rolling? and thus of molten iron, silver, lead, etc.? And shot are made round by rolling over and over in descending, all prongs catching the most air, which whirls it over and over till all sides are rounded up.

24. *That great maelstrom off Iceland is caused by the warmer and therefore lighter gulf waters rolling in with those colder and heavier from the frozen sea; their commingling warming the northern waters enough for that piscatory breeding and growth which supports fowls, seals, whales, and man.* A like current exists in the Pacific waters, less rapid because broader, greatly in the interest of commerce by ships taking different currents in different latitudes and longitudes, according as they require to be speeded in this or that direction.

25. *Air always moves in circles.* All hurricanes wring off all tree tops and branches by blowing hardest on one side. All eyes can see all branches and all trees partly twisted in strong winds, and feel themselves half turned around by every strong gust.

26. *Whirlwinds* are obviously named from their whirling all they lift round and round, instead of shoving them along the ground. Why so many persons carried by them so far with so little injury? Because

whirled up, transported, and then whirled out of their middle; which moves fastest and lets down on its less rapid borders. If pushed along, they would be flung against everything in their current, and dashed to pieces. And all are let down gently, instead of falling hard; because this whirling wind half counteracts their gravity.

27. *This whirling upwards lifts off roofs*, instead of flattening down houses straight, as currents must needs do.

28. *All storms move in circles*, the greater or less as they last longer or shorter. Ask the Signal Servicé. A shower is a mile or two through, its winds blowing one way at the beginning, and another at its close; because it sweeps on till it brings us on the opposite side of its circle; while long storms usually start near or below the equator, are hundreds of miles in diameter, and move north-east about railroad speed; for the printed accounts of storms "at the front" or from Georgia or Mississippi or Texas, reached us about with the storm they described.

29. *A change of wind in any storm indicates its closing soon*; because its passage has brought us to its farther rim—true equally of wind storms. "Old Prob" is summoned as our witness. All these²⁹ and all other great ranges of facts, without one counter range, prove by induction on the grandest and minutest scales that

All fluids roll onward, none slide.

Some utilitarian rationale underlies every natural law, each being a *sine qua non* necessity. Several useful, even indispensable ends are wrought out by this rotation of fluids, among which are:—

1. *Greater ease of motion*, by obviating friction. All motion must transpire by sliding or rolling, and perfect Nature will choose the one which gives her the most motion with the least friction, or loss of power. Then which does this? Motion by rolling several fold—proved thus: Make a given team haul all it can on ice. Now mount several times more on wheels, and it can haul this load much easier; and loaded wheels would slide on ice if they slid easier than rolled. We use sleds, sleighs, etc., because easier loaded. This shows why wheels are employed almost exclusively in all transit by railways, steamboats, wheeled vehicles, etc. And all bullion could be rolled far easier than carried, if cast in balls instead of bars or "bricks."

2. *Fluids must intermingle*; else how could they be disseminated, offensive odors dissipated, agreeable diffused, etc.?

All expelled breath and animal effluvia, rendered poisonous by an excess of carbon, are just what all vegetables require for their growth; yet it can be conveyed from animal to vegetable only by being first diffused through the atmosphere. How could we enjoy lemonade unless its sweet and sour were well mingled? and thus of other drinks. For a thousand other like reasons, various fluids, gases, odors, etc., must be amalgamated and intermingled; which this rotation effects by throwing off

flakes from that in motion to that at rest, both of which mix in with each other till they become another fluid, composed of both. Pour muddy water into clear, or different colored fluids together, and see how flaking and re-flaking commingles them perfectly. Your eyes are your demonstrators.

Other facts and quo modo reasons will suggest themselves to intelligent readers as proofs and illustrations of this great natural rolling law of all moving fluids; yet it is rendered sufficiently apparent already. Is it not singular that, with all these great ranges of inductive facts everywhere so patent to all beholders, none have noticed this rotating law as such, though thus demonstrated by induction on a scale so large and obvious?

18.—PRESSURE PROMOTES ACTION, AND IS NECESSARY TO IT.

All action transpires under pressure, and is promoted by it. Air presses everywhere upon everything, fifteen pounds per square inch, or over a ton to every square foot. From ten to twenty tons bearing on each person forever! What a burden, unless turned by this law into a blessing! Might we not expect Nature to turn it into some great practical utility? She does.

Wind, only air in motion, puts forth an amount of pressure incalculable and fearful. That dead, heavy, steady blow on western prairie and Rocky Mountain plain, is really tremendous. What can well stand before it? The almost infinite power of the hurricane—what description can do it justice?

Water exerts a pressure still greater upon all its inhabitants, and is so great that giant powder exploded upon a flat rock shivers it, because expansion downward into the rock itself is easier than upward against this incumbent aqueous weight. The river's steady current; the tide's resistless flow; the cataract's ceaseless dash; the flood's mighty rush, sweeping all before it, and bearing on its brawny bosom ponderous masses as if they were feathers, etc., but attest the pressure created by water in motion.

The circulation of sap, etc., is probably effected chiefly by this atmospheric pressure upon the bark, pushing the underlying sap upward, aided by electricity, and pressing on each side of each twig and leaf, thereby balancing itself; and capillary attraction is doubtless effected chiefly by this means.

The blood is returned to the heart by being squeezed along the veins, partly by muscular and atmospheric pressure on them. Exercise promotes circulation by every muscular contraction squeezing the blood forward: valves prevent its going backward.

The muscles act best under pressure. Laborers work easiest with a belt drawn tightly around the waist; and hence the Biblical "girding of the loins," and the girdle worn by athletes; while dancers toss their bodies about with much more spring and agility in closely-fitting tights

laced snugly from instep to calf, furnishing a fulcrum for their muscles to react against; yet moccasins fail to furnish this pressure, and are very hard to walk in.

Sensation is obviously effected only by external objects pressing upon nervous surfaces. They are expressly adapted in structure, and spread all over animal bodies, crustacea not excepted, solely to receive and diagnose all kinds of pressures, which are pleasurable when this contact benefits, but painful when it injures. What but pressure by contact against all animal surfaces guards their internal organisms? Pressure also executes all the other senses. Is not audition effected by vibrating air pressing on the ear-drum; taste by contact of flavors with the tasting nerves, and smell by odors pressed by the atmosphere on the olfactories?

Breathing is effected throughout by pressure—the air always and everywhere pressing through mouth and nostrils into the lungs when it can; the diaphragm pressing down upon the lower viscera to make a vacuum which the upward pressure of the ribs re-enlarges, by which we inspire; and expire by the viscera pressing upwards and ribs downward; and the colder outside air crowding the warm breath upward, lest it re-enter.

Every speaking instrumentality is resolvable into pressure. Muscles contracting from all sides upon the lungs, supply that first prerequisite of all vocal utterances, compressed air; which is thereby pressed through the throat, where inner pressures modulate it this way and that to create these and those articulate sounds; while tongue, lips, and roof of the mouth, pressing against each other and teeth and gums; give other forms of this pressure on each; and as we desire to give the one the greater emphasis to any word or sentence, we instinctively impress the more pressure on the one we desire to impress most.

Nature employs eight other necessary instances of this pressure in initiating life, unnoticed though palpable; and the greater this pressure the more life, vigor, and power. But—

Pressure as manifesting mind furnishes perhaps our best examples of this law. We soon prove that the brain is the organ of the mind; that the mental function is created by undulations in its gelatinous surface; and that blood, by filling the skull dome full, squeezes this surface up against the smooth inside surface of the skull—the more snugly the more blood there is in the brain; which renders these undulations the more rapid and violent, just as the beaten drumhead vibrates the more rapidly and loudly as it is strained the tighter—a principle we shall soon fully explain. But

As practically useful an illustration of this law as any is that

19.—PRESSING EYELIDS ON EYES PROMOTES AND SHORTENS SIGHT.

Spectacles are unnecessary, and their use at all ages is injurious; partly because they render the eyes weak from inertia; but more because the

two glasses often have different focii, or one longer-sighted than the other; besides almost always being wider apart or nearer together than the eyes. God never made eyes so bunglingly as to need supplementary glasses in ordinary sight. Their cost, too, is something to many persons; especially since so many are lost or damaged.

I have made this most valuable discovery that spectacles are unnecessary, are injurious, thus: I used them from my forty-seventh till my sixty-fourth year, as a matter of course, thinking *all had* to use them to counteract that "long sight" induced by age. My great discovery of seeing better without glasses than with, even down to old age, and promoting sharp and far sight during all ages, was incidentally thrust upon me as follows:—

When about forty-seven, my sight became so long that I had to hold what I read too far off to see distinctly after sundown; which I shortened up by using spectacles. This long sight kept growing on me, so that I found them more and more necessary by day as well as night, and those still stronger or older, till I supposed I *had* to use them, like all other elderly persons, whenever I read or wrote; and finally an older pair by night than day.

I read and wrote at home summers with glasses, yet did little of either the other nine months while lecturing, but marked my charts without them, because I could see just enough to tell in which column to placè the figures required for each Faculty, and designate each by their order, length, etc.; and found I could read better when I closed my lecturing seasons than when I began them. I used glasses constantly while preparing the copy and reading the proofs of "Sexual Science" in 1869; and noticed that they were much more necessary when I finished than when I began it; yet that I could do better without them the year after. This surprised me, and made me ask myself—why? I wrote "Physiological Science" and "Religious Science" in the summer of 1870, using glasses, when my sight again retrograded; yet I could see better without them the next winter, when I read and wrote little, but marked my charts without them. In 1872—

A very bright girl of seven, brought for examination, with eyes sharpened by being deaf, asked her mother, "What makes that old man keep *squinting* so?" playfully imitating me. This fastened my attention on the fact that I did keep drawing my eyelids down on my eyes, all the time while marking charts, so as almost to shut them up, leaving only a small opening for light. On sitting down to "Creative Science," I prepared copy and read proof in 1875,

Without glasses from June till September, whose elongating evenings required me to work by a country light, when I again used glasses by lamplight, thinking, of course, after beginning to use them, I could not work at my desk without them by day; whereas, to my great surprise

and delight, I found I could write and read proof without them by day while using them at night! I now do almost wholly without them, even in reading proof, which requires the sharpest sight, and can read the finest print without them; and the better without them the less I use them—though I have not yet learned to read without *light*—and use them only in a poor evening light; conscious that the less I use them now, the better I can see without them hereafter. I can also see objects at a distance now, about as well as ever.

I am delighted beyond measure at this restoration and improvement of my natural sight, which I supposed permanently impaired for life. A fortune left me could not please me a tithe as much. Just think what sight is worth, and then measure the value of its prolongation into and throughout old age! The utility of this discovery to all who will practice it is incalculable, and its practical application almost ridiculously easy, and simply this:—Keep on reading and writing without glasses, as usual, after your sight begins to grow long, meanwhile *pressing* or squeezing your eyelids down on your half open eyes; that is, *squinting*, just as you do involuntarily when you look at things very small, or desire to see them extra plainly, or a great way off.

The Indian Chief Mangus Colorado, when ninety, could tell every person passing between house and barn from his little hill *ten* miles off by measure, doubtless by this very means; and all old persons I have ever observed, who read without glasses, involuntarily employ this squinting means of pressing or drawing the eyelids down upon their partly open eyes. Any and everybody can test this *principle* by looking at any far-off or small object, and then *squinting* on it, when they can see it much more plainly and clearly. Try it.

N.B.—The eyes are not to be touched or pressed by the fingers, but *only* with the eyelids. A few facts: At a lecture in Boston I sold a pamphlet containing these directions, and when at a lecture a week later I again recommended it, a listener arose, and, before three thousand people, said:

“I have been obliged to use glasses for years in reading my morning paper, but bought this pamphlet a week ago, followed its prescriptions, and can now read better without glasses than I could before with.”

“*I bought this pamphlet a week ago* in Galesburg, Ill.; had to use glasses before; can now read better without them than before with.”—*A hearer in Rochester, N. Y.*

I never heard any other testimony. Only a little persistent practice will suffice to enable all who have worn glasses for years to lay them aside, and see better without them than before with; and the easier the longer they try it.

Two natural laws underlie this great optical discovery: the one just

demonstrated, that all pressure applied to organs promotes their functions," and the other the optical law that

Eyelid pressure on the eyes rounds them up.

The cause of long sight in elderly people is the *flattening* or shortening of their eyes from front to rear, and their *rounding* at their sides; which throws their visual focus the further off the flatter they become, till the reader has to hold his book too far off to see distinctly; which wearing round-glassed spectacles counteracts; whereas this eyelid squinting *elongates* the eyes by the eyelids pressing on the *sides* of the eyes, and not pressing on their open front and rear; just as pressing any elastic globe on opposite sides shortens it on the sides pressed yet elongates it on the unpressed sides. This point is important enough to warrant this repetition in the form of a dialogue:

"What causes the long sight of age?"

"The increased *flattening* of the eyes from front to rear."

"How can this natural process be counteracted, and long sight shortened?"

"By *squeezing the sides* of the eye with the eyelids, that is, by *squinting*, as all instinctively do whenever they need sharp sight, and in proportion thereto."

"What does this instinctive pressure of the eyelids upon the eyes do to them?"

"It *rounds them up*; thereby counteracting that flatness which causes long sight, and thus shortens up their focii; besides redoubling and intensifying the sight itself, on the principle above proved that all pressure of organs promotes their functions" when applied to the eyes, visual clearness and power. This flattening consists in their front part receding and sides bulging out unduly. Now these eyelids press mainly on these *bulged sides* of the eyes, thereby shortening up their lateral axis, and elongating that from front to rear. All this is too obvious to need argument or amplification. Next for its practical application. After your sight begins to fail,

"Keep on reading, writing, looking, without glasses by *squinting*, that is, squeezing your eyelids down on your eyes *while open and looking*; thereby both enhancing their present sight, and *rounding them up* for better future seeing."

"What shall those long used to spectacles do? Do without them, yet keep on trying to read and see with the naked eyes by squinting."

This is a veritable original discovery, here first published, which, applied from forty onwards, will enable all to keep on seeing and reading about as well after fifty as before, clear on till death. It is simple, but efficacious, and consists in applying well-known optical laws, in conjunction with the natural law that pressing all organs promotes their function.¹⁷ By its use alone I can see better now at seventy-one than I could twenty years ago. In 1860 I could not read even print like this small pica without glasses, whereas now I can read brevier, even minion; can read any newspapers right through, its finest print inclusive, easily; besides writing all night by a pale light, without glasses. So can anybody else who knows

how. Nature does not compel us either to use glasses or go without seeing.

Short sight, its cause and cure, is explained by our principle *in reversie*, thus: Saving what is hereditary, runs in the family, and even then, doubt less in the first instance

It is caused by reading and studying by a poor light, which induce this instinctive squinting or pressing of the eyelids upon the eyes in order to see the clearer,¹⁷ that is, to counteract this dim light; which elongates them too much, and thereby shortens up the axis of vision, makes the eyes *too long*, and of course vision too short. So be careful how you read by a poor light, or by twilight, lest you unduly elongate your eyes by squeezing them with your eyelids, in order to see the plainer in a dim light.

To cure short sight, keep your eyes wide open, that is, lift your eyelids up off your eyes, and be especially careful to read only by a good light, and then *never squint*; for this shortens vision as shown above.

We make these points plainer under "Sight," by giving optical drawings, to show how sight is executed.

I take no special pride in having been first to make and proclaim this really great discovery, which everybody instinctively practices hourly; yet opticians, and writers on sight, where have your own eyes been not to have seen this fact and law, as patent as your own nose on your own face? Yet its chief honor belongs to the discovery of that pressure principle¹⁷ out of which it grows.

20. REACTION A LAW OF NATURE.

Antithesis is a most beneficial natural ordinance, hitherto overlooked. "Extremes meet," and create their opposites.

The four seasons illustrate its application on a long and large scale; and each creates the other. Their Creator would not have taken such pains to render them inevitable and eternal without their being correspondingly useful and necessary.

Day and night are equally so; for all perpetually see and feel the blessings they confer, throughout all time, on every man and woman, beast and reptile, even insect and vegetable. How could we do without them? What if we had one perpetual mongrel of both, a dingy twilight, early and late, neither dark enough to sleep nor light enough to see well, ages upon ages! How infinitely blessed this "light by day, and darkness by night!"

Long days with short nights in summer, alternating with long nights and short days in winter, furnish another illustration of this great antithetical law; as do ever changing moon and tides, others.

Atmospheres change between warm days and cool nights, hot middays and cold midnights, with several successive seething hot days and nights following as many cold, the benefits of which all must perceive, furnish

another; as do also several successive bright, calm, clear, sunshine days and nights, followed by as many murky, cloudy, windy, stormy ones; and diurnal changes of weather, hot, dry, clear, cloudy, a drenching thunder-storm, cool, and clear again, all in the same half day. What if we had a perpetual drizzle? How much better as it is, raining when it rains, and sunshine by itself, with mud to-day and dust to-morrow! Is California any the better for her perpetual drouth from May to October, and rainy season from November to April? Yet even they illustrate our subject; the alternation being at longer intervals.

Seasons of vegetable growth and dormancy apply our principle to whatever grows out of the ground; as do also the periods of vegetable, animal, and human growth, maturity, and decline; and likewise birth and death; and each succeeding the other in the same fixed order, or from and to the same identical successions.

Human changes innumerable illustrate this law of opposites following each other. Flatter up a man to-day, and he'll return the compliment to-morrow; but backbite him to-day, and he will bite back to-morrow, and every day after; yet do one a good turn to-day, and he'll do you a better one to-morrow, and keep on doing; but strike him to-day, and expect him to strike you back to-day, spit in your face to-morrow, and pound you the next day with both fists: so be careful which way you yourself *begin*.

Nations illustrate this law on a grand scale. The French under Napoleon subdued and tyrannized over the Germans, robbing them of their territory, and goading their national pride to the quick; while the Germans quietly bided their time, cherished their revenge, and paid back with compound interest on the bloody battle-field of Sedan, and in surrounding and taking their idolized city of beauty and learning; thereby maddening all France, besides augmenting taxation beyond endurance, thus fomenting revolution, and also entailing a future contest probably more terrible to Germany than taking Paris was to France; while if Germany had stopped at Sedan, and been magnanimous to France, both would have enjoyed a long peace unarmed; whereas both must now keep prepared for a war of extermination, which will yet put the German emperor off his throne, and compel a change of government there; and a change in their own governmental policy changes France. Bismarck should have known and heeded this law, and not antagonized the Catholics, who will now help on revolution, though they abhor it.

Turkey and Russia, in the past and present, Christian and Moham-medan, Catholic and Protestant, a "solid South" solidifying the North, Fenian hatred of English tax-gatherers, among moderns, and ancient Carthage invading Rome, with Rome answering "*Carthago delenda est*," Rome's conquests creating Rome's conquerors, are practical illustrations. All history, ancient and modern, is full, is even made up, of kindred ones. The same impulsive person in being extra good in some things and bad

in others, and great men having great faults along with their special gifts, and geniuses in some things being inferior in others, is another illustration of this law in a mental aspect. How grasping, even rapacious, some men are in making money to-day, who fling it away in a wild revelry to-morrow! How inexpressibly kind is the same person to one, yet unmercifully cruel to another! How loving and good the same woman toward one man, yet hardened, hating, and hateful toward another, though neither especially deserved either! How scrupulously conscientious is the same person in one respect, yet utterly unscrupulous in another—paying his dues to a farthing, yet remorselessly ruining his neighbor's wife and daughter! How proud are some in some respects, yet utterly wanting in self-respect in others!

Alternate action and rest, health and sickness, weakness and strength, vigor and lassitude, hunger and gluttony, getting drunk and sober, are but physical outworkings of this law, and another of the greatest practical value is that physiological errors can usually be cured by instituting their opposites. Gluttony causes dyspepsia, and eating too little is the best cure for overeating, as is rest for overwork; nor does anything prevent working in the future equally with overworking in the present. The more one has to do, the less he can afford to overdo; and vigorous muscular action cures excessive mental. All excesses create a proportionate paralysis. Extreme sensitiveness benumbs itself, thereby warding off further injury. Too much light to-day blunts the visual powers for to-morrow, so as to prevent to-morrow's light from redoubling the damage. Bonaparte cured his present ills by ascertaining what caused them, and then going to the opposite extreme—a correct principle in all respects, and founded on this law of antithesis.

Our very constitutions are predicated on this identical principle that any and all extremes react to produce their opposites. Getting too warm cools us off; and too cold, heats us up; and too tired, makes us sleep the better, in those who have constitution enough to react. This *must* be thus in order to prevent even slight extremes from proving ruinous.

Kindred illustrations by millions prove that we are expounding a veritable natural law which hitherto has escaped notice as a law; though many of its facts have enforced attention. We shall apply it hereafter to the cure of many diseases; besides showing *how* any and all extremes create their opposites.

Note how perfectly this underlying principle harmonizes with that already stated in¹⁹ that all abuses of natural laws correct themselves.

21. ELECTRICITY NATURE'S GREAT MOTOR INSTRUMENTALITY.

Some tremendous power, spread through all space, and "operating unspent," becomes indispensable in executing Nature's myriads of functions, analogous to ubiquitous "perpetual motion," as her "Handy Andy," every-

where and forever "on call" to execute every change and function throughout all her domains—something to Nature what the great Corliss engine was to our Centennial machines. Thus what stupendous dynamic force keeps all the starry hosts in perpetual motion forever? How many "horse powers" are thus required? Untold billions. Then winds and tides consume how many more billions? Add the growth of all that grows, as in thrusting roots through hard soils, and all the motive powers put forth by all forms of life, from whale and elephant through man and gnat. And needs mind no force in putting forth all its raging passions, intense emotions, grasping thoughts, soaring aspirations? Can nothing affect anything? Can we see without some motor power behind vision to put and keep it in action, analogous to steam for propelling machinery? And thus of the loves and hates in their every action!—of memory, worship, courage, caution, and every iota of mental action! Think out this problem throughout every exercise of mind and muscle, and every function of animate and inanimate nature! Each of these effects has its motor cause. What force effects all this?

Electricity is Nature's giant Corliss engine—ubiquitous, omnipresent, and all-powerful; acting thus:—

It is composed of two forces, called positive and negative, of which galvanism and magnetism, mineral and animal, are but its modifications, and gravity one among millions of its outworkings. Its motive power is generated by this its fundamental principle, that all bodies charged positively repel each other, as do all negatively charged; while all positives and negatives attract each other—a law and fact universally conceded. What this mysterious occult power is, concerns us less than that it exists, and acts and reacts always and is perpetual motion; inherent in all things. Literally, it "lives in all life, extends through all extent, spreads undivided, operates unspent."

22. ELECTRICITY PROPELS ALL ASTRAL WORLDS.

Our Sun is negatively charged, and the source of all negative electric force, while all his—should be her; for behold all her planetary children, our earth of course included—are positive to him. Cold gives the most of positive electricity, while heat is negative; and hence the earth is charged negatively in summer and by day, and positively by night and in winter, and therefore most invigorating. Cold is strengthening and masculine or virile, and heat feminine and growth-promoting, that is, bearing; while sweet is probably feminine, and sour masculine, and lemonade their marriage. These opposite electric states draw them together. Yet his being so much the largest, and they being all around his sides at once, draw them toward him, instead of him to them; earth toward sun, which generates her centripetal force. Yet what

prevents her rushing right into him, to his injury and her utter destruction? This: the nearer she approaches him the more he charges her with his negative electric force, which makes both repel each other the harder the nearer they come together; which pushes her gradually back from him, and off toward the farther end of her elliptical orbit; she meanwhile gradually giving off her positive electric force into the fields of space, till she reaches the extremity of her elliptical orbit, where she gradually resumes her normal and positive condition; which again, after making her move off slower and slower, finally stops her going off any farther, and little by little whirls her around, and again draws her toward him; only to repeat these annual attractions and repulsions forever, besides creating our four seasons—summer, when she is nearest to him and magnetized the most; winter when farthest off; and spring while she is approaching; and fall while receding: whereas, if her orbit were round, as it must be if Newton's theory is correct, she could give us but one season, half summer and half winter; mixed and perpetual.

Behold the good wrought out by her gradual reception and disbursement of his negative electric force!

Her days and nights, consequent on her rolling through her orbit,¹⁶ are created thus:—He is perpetually charging her light side negatively by his negative rays—clouds not preventing, because near her—so that he negative, and the whole of her light side also negative, their two negative electric states are forever pushing her whole light side off from him with tremendous force; while her whole dark side is positive, and therefore as powerfully drawing itself around toward him; like two stout men on opposite sides of a huge barrel, the one pushing and the other pulling it over and over. One might expect her to roll from him. What rolls her against him?

Her afternoon side being the most negatively charged by all his forenoon negative electric force being retained and carried over on to her afternoon side, which makes it hottest, or as it were heaviest, pushing her from him hardest; while her dark side is rendered the most positive, or demagnetized, by her slowly dispelling his negative electricity, and resuming her positive state gradually; which draws her dawning side to him much more than her twilight side. She could not turn backwards against him, nor move sidewise. Just

Imagine the amount of rotary power generated all over both her sides pushing and pulling her over and over while she exists and shines! Who wonders that she rolls so fast, her eight thousand mile diameter making her move easily, considering her vast ponderosity, besides her moving so swiftly through her orbit?

No planets or comets can ever collide, for all are positive to all, which makes all repel all the more the nearer they approach each other. Laugh at all such colliding predictions. This theory of astral motion, both its genera-

tion of their motive force, and its mode of regulating their movements, all school children can understand, yet the strongest mind can not understand Newton's figuring, which presupposes a miracle to start these movements; whereas philosophy admits of no miracles. Mathematical demonstrations are understandable and conclusive, whereas Newton's are neither, and must some day be superseded.

Changes of weather and temperature are obviously caused and governed by different electric states. This is proved by all thunder-storms bringing thermal changes, usually from heat to cold, or negative to positive, yet never occurring in cold weather; by positive electricity superabounding in the coldest weather; and by the moon and planets controlling the weather; its states being predicted accurately for the whole year in advance from their changes and positions—an important weather diagnosis "Old Prob" should add to his excellent predictions.

Tides raise water several feet in all seas, and along all shores, and seventy on Nova Scotian; obviously by the positions of the moon; for each always tallies with the other, with electricity obviously for their motive principle.

All vegetable growth is affected by electrical conditions, and greatly promoted by their right artificial applications.

23. ELECTRICITY EXECUTES SENSATION, MOTION, ALL FUNCTIONS.

Nature carries on functions innumerable and diverse, by *agents* simple, yet infinitely ramified and effective.

Motion, sensation, and all life's other functions must needs be executed by an agent extremely subtile, and acting as instantaneously as lightning. Please think how quickly you often think and act. The instant your finger touches fire you jerk it away; yet think out by what concomitant steps. A part of your organism is suffering damage; it reports its status to the life center, which acts instantly, and summons will and all the needed muscles and nerves to withdraw the suffering part, and they snatch it away; all done in the twinkling of an eye. What but electricity could do so many things thus instantaneously? Yet

Electricity can. Suppose two telegraph batteries so arranged that a spark sent from one to the other struck a hammer which sent another right back, the sending and returning sparks would be instantaneous, and yet, meanwhile, had gone and come hundreds of miles; time thus overcoming distance, as just shown in sensation. Electricity effects the telegraphic, then why not the sensational and motor nerves? Could any other agent act thus instantaneously? What else could act quickly enough to subserve the needs of life? A person shot jumps the instant he is struck, because electricity jerks all his muscles into simultaneous action to effect the leap. Organic destruction might be instantaneous unless instantly averted; so

that the life force needs an agent always on call which acts with lightning celerity in carrying mandates to and from; and has it in lightning itself. Literally, we live on the lightning principle. Nothing else could do what electricity does do. We shall yet prove that, and show how, it propels the blood. So much for deduction; next for inductive *facts*.

All human beings, all animals, abound in electricity. Who but often feels an electric shock with an involuntary twitch, precisely like an electric, darting between head and feet, or through a limb? It is just like an electric shock, as its sensation attests, because it *is* one. Many can light gas by touch. How? By an electric spark generated within them. Water is a good electric conductor; and a friend of mine is so electric that in holding her fingers under running water near a faucet a stream of electric light is seen between her finger and the faucet; while holding her hand sends an electric stream up the arm, as distinctly perceptible as if receiving electricity from an electric battery. Others by thousands give and receive this electric current very perceptibly, even in merely shaking hands.

Combing the hair of a healthy person in right cold weather creates electric sparks by the thousand, easily seen in the dark, and their snapplings plainly heard; and the more numerous and snappy the healthier the persons combed, and colder the weather. Your three senses—sight, hearing, and feeling—are the witnesses.

Drawing off woollen undergarments briskly in cold weather creates these same electric sparks—a sure sign of health.

Stroking pussy's back in very cold weather creates like sparks; an experiment all can try.

That electricity creates said twitches and sparks is self-evident to all who know what electric sparks and shocks are; though we group galvanism and magnetism under the same head, because each is obviously produced by the same primal electric forces.

Their superabounding in cold weather, when positive electricity is the most abundant, proves that they obtain in all weathers; and the fact that all the life operations are most vigorous then, adds to our argument that electricity is the great working agent of life; and we show hereafter that its action *creates* life, as well as executes its functions. In fact its two forces, positive and negative, are virtually Nature's male and female parents of all life. Please

Note this proof of this electric principle, as it will be often referred to subsequently, and also established by many other inductive ranges of facts. We hereafter show Nature's *mode and manner* of carrying forward motion, sensation, breathing, etc., by electricity.

24.—ALTERNATE HEAT AND COLD CREATE ELECTRICITY, CLIMATE, ETC.

*Nature is perfect:*¹ climates are changeable; therefore the changes of climate are beneficial. When I believed California had the best climate on earth, and the only one fit for luxurious human beings to live in, I still wondered that God should make one so good, and all not equally so, till I learned that, like His fruits, some sweet, others sour, some late, others early, etc., thereby adapted to all tastes, so He had made California the best climate on earth for some, but poor for others; and thus of all other climates. What is just right for Hottentots, would soon kill Siberians. Equithermal climates are best for those too weakly to react against sudden changes from heat to cold, and back; while the latter is best for the robust. One fairly vigorous is rendered the more so by every change of weather, either way. Extremes benefit, not injure, all such. A New England climate often changes more in five hours than a Lower California does in as many years; yet its inhabitants are as healthy, and more hardy. To those in health

All thermal changes are pleasant from warm to cold, and then back, from and to each season, from storm to sunshine, and the converse, and so of all others. And their being agreeable, proves that they are beneficial. Rendered so by what law? By this, that

All climatic changes generate electricity. All know that changes from heat to cold do so. All thunder-storms do these two things—bring cold, and brace up; except that any storm which clears off warm will soon be followed by another that clears off with cold. All thunder-storms equalize the atmospheric electricity. Before them, that is during heat, negative electricity abounds; after them, cooler weather and positive electricity. That is, changing from heat to cold generates positive electric force; and from cold to warm, creates negative. *This* is what both makes us feel pleasant, and long for the other, whenever we have either. Those who need and can stand more positive electricity, love cold weather best, and changes from warm to cold; while those who lack reactory power, prefer the warm.

*Since man must have electricity,*²¹ and since all thermal changes generate its positive or negative force, therefore they are beneficial and necessary. We shall show farther on how all can utilize them.

Summer and winter are beneficial on a scale commensurately larger; as are spring and fall. At the equator the negative electric force predominates; in the frigid belt, the positive; in the temperate, both by turns. Those too high strung, go south; relaxed, go north; and all who can stand their own climate, stay at home. All who go south become toned down, for they fail to get positive electric force. "Oh, for some good northern, bracing, breathing timber," was the general exclamation of northern boarders at Aiken, S. C., in Feb., 1878.

The facts that cold weather braces up and quickens all animal functions and abounds in positive electric force, while warm relaxes and tones down all, and in it negative electricity predominates over positive; that thunder-storms equalize electricity by inducing both cool weather and positive electricity which tone up, furnish inductive proof on the largest inductive scale that transitions from hot weather to cool generate positive electric force; and from cool to warm, usually by sunshine, create negative electric force. This proves that the sun is negative; that in winter the positive electric force prevails, and in summer the negative; that vegetables, grains, fruits, etc., are negative, and cold air positive; also opens up the true theory and the fundamental principles of Nature in general, and human nature and functionism in particular; which will yet be run out in detail, and applied to the illimitable promotion of human life and happiness.

22.—HEAT PETRIFIES. HOW TO TURN WOOD INTO STONE.

A petrified forest can be seen on a hill-side about six miles from Calistoga Springs, in California. How came it there? What turned its wood into stone? It consists of pine, oak, hemlock, and other trees turned into veritable stone. Turned *when*?

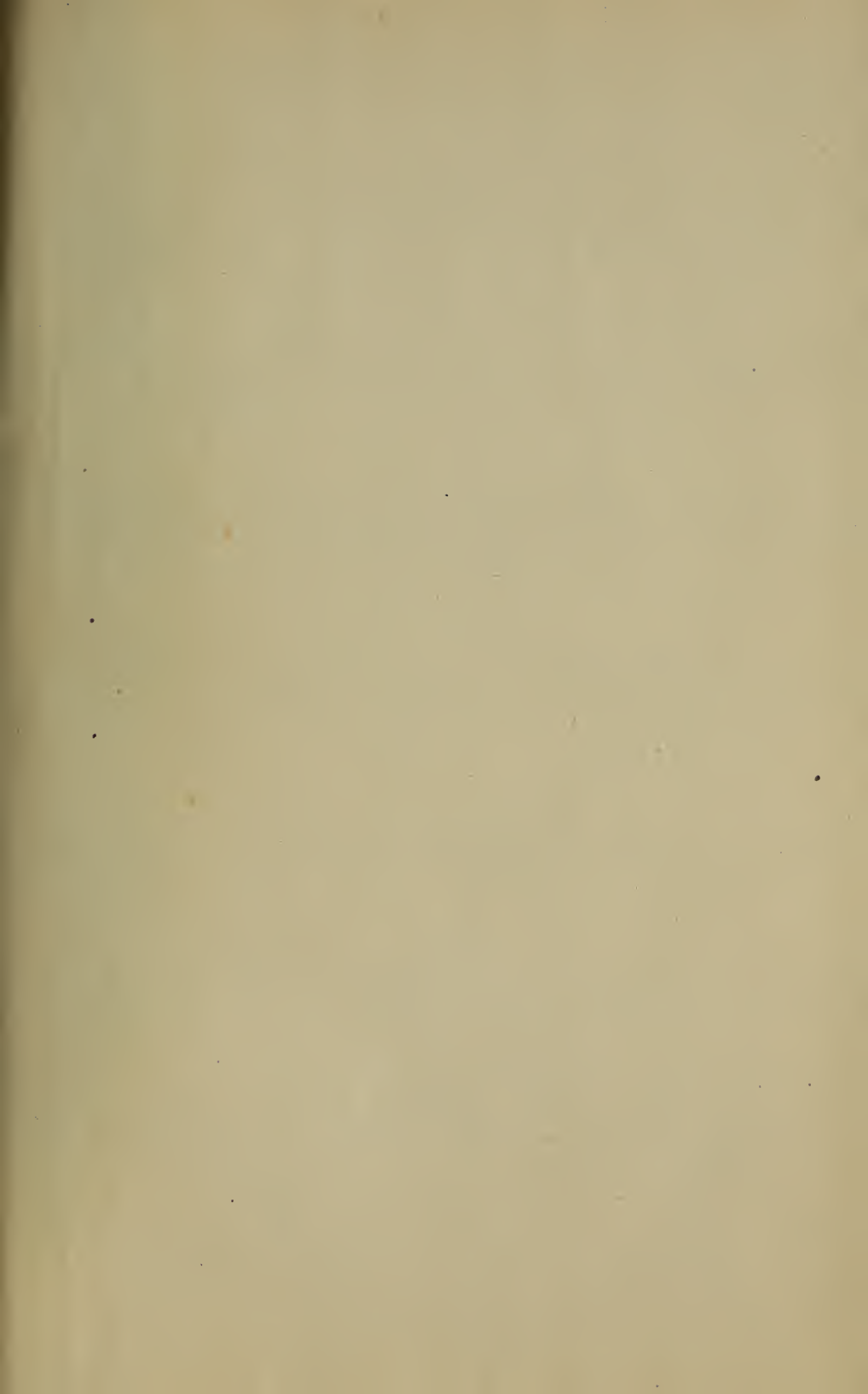
Whilst standing. This is proved by the trunks, some six feet through and of all sizes downward, roots, branches, and bark included, being broken in two every four to six feet, *square* off; for if they had broken while yet *wood*, they would have split and splintered while breaking, and broken into longer pieces, with splintered ends. Their being broken off into short lengths and *square* ends, is proof demonstrative that they fell while *stones*, not wood—were petrified before they fell. Nothing can be clearer. Then what turned these standing, growing trees into stone?

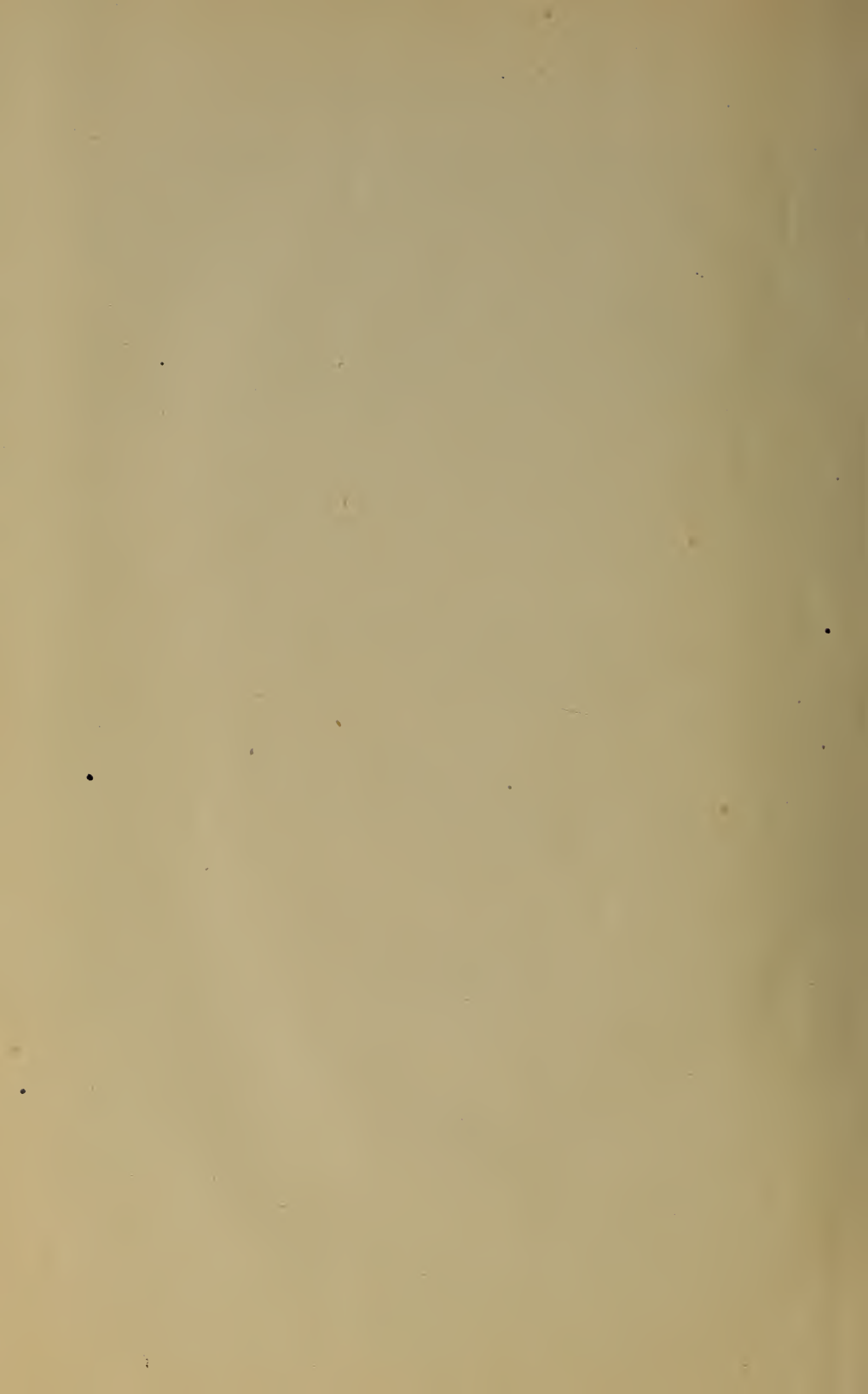
Volcanic heat—demonstrated thus, 1. That Calistoga Springs are a smouldering volcano is proved by their continually emitting hot water, steam, hot mud, and other volcanic eruptions. The adjoining mountains rise straight up from the circular plane in which these Springs are, and resemble the inside of an old crater perfectly; and a high mountain peak beginning near their base was obviously formed by volcanic action. The heat from this seething volcano, after an eruption, rolled along up through this mountain forest, and turned it from growing wood into solid stone; yet did not ignite, because it contained no igniting sparks, and because nothing can burn without oxygen, which this belching volcano had pushed off before it. Heat turns many things it can not burn nearly or quite into stone, as china and earthenware, door-knobs, pottery, clay, clinkers, brick, slag, and many kindred things.

2. *The lava which formed the Rocky Mountains* crowded the animals along a plain in which they were feeding—preying on and being preyed

upon—up against its rocky sides, near the Columbia River Falls, in Oregon, and overwhelmed and buried them all together, and left their bones petrified where and just as they then stood and were, by its heat expelling all oxygen, and giving no spark. Their petrified bones have been exhumed by the Rev. Mr. Condon, the Oregon State Geologist.

Mankind will yet utilize this heat-petrifying principle, by first shaping wood and other things for manufacturing requirements, and using the waste heat of furnaces, rolling-mills, etc., for converting them into veritable stone. When they do, may they remember by whom and where this principle was first propounded.





wives to do any and every thing they wish with their husband's hearts, purse and whole being—as do harlots with their victims by this same means; while brides by millions stab their doting bridegroom's tender Love "right under its fifth rib," turning all its lasciviousness into bitterness ever after, just through ignorance of this center marital function. O what agonies most wives incur, and ecstasies lose, to themselves, husbands, and children, through its sins of omission and commission! all of which this knowledge would prevent.

HUMAN INSTINCT NOW COMPELS attention to this momentous subject. Experience obliges all to learn, by self-destruction if not otherwise; by right action or wrong, not none. *Small science guide its right use*, or blind passion slaughter these groping millions by its wrong? is the only alternative. "Guide" says this book: "Let them wallow and rot on," answer its opponents. Read and heed all ye who are sexed, and scan attentively these soul-stirring subjects with many more, here treated scientifically.

SYNOPSIS. CREATION Nature's great work. Has its science. Dignity and surpassing utility. "Each after its own kind." All parental instincts, proclivities, specialties, likenesses, longevity, stature, strength, diseases, marks, deformities, even all iotas, descend to progeny. Often skip one generation. Two legged horses. All Jews like Abraham. Geniuses come from long lived stock. Value of this creating capacity. Gender creates and transmits. Consists in "male and female." Inheres in the mind. Masculine and feminine heads and attributes. Hybrids. Analysis of manhood by what women prize in men—strength, stature, force, firmness, dignity, gallantry, generosity, originality, talents, passion, &c.; because males stamp these traits. Analysis of womanhood; ditto of female beauty. Value. Only maternal attributes beautify women, or attract men. What physical female qualities men admire. Two types of beauty, oval and fawn shaped. False forms. Fashions. What traits men prize in women—acquisitiveness, love of young, affection, prudence, tact, piety, ton, gratitude, scholarship, brilliancy, language, mirth, kindness, &c., because mothers impart them to children. The sexes should co-operate in all things, antagonize never. "Woman's rights," and how to get them. Loved dependence vs. unloved independence. How men and women should behave toward each other. Signs of perfect and impaired sexual states and voices, motions, forms, postures, faces, eyes, complexions, redness, pallor, fat, &c. Puberty. LOVE. What it does and is. Passion its incentive to action. Stronger and weaker. Gives conjugal talent. A male and female magnetism loves and creates. Precious. Influence supreme. Located at the life center. Active Love doubles, dormant halves, warmth, circulation, sleep, motion, respiration, health, charms of face, manners, tones, &c., affection, appetite, economy, courage, energy, tact, prudence, self-trust, perseverance, morals, hopes, religion, kindness, taste, mirth, buoyancy, perceptions, order, music, memory, expression, sense, politeness, intuition, all human enjoyments and virtues, and builds up or breaks down all. How? Most powerful. Must act. Preciousness of a hearty vs. tame. Right action vs. wrong. Parties, dances, sociables, mingling of sexes. Spies. Conversatories. How to moralize young men. Averted, hardened, disgusted, deadened, inflamed, and other states. ONE Love vs. free. Self-perpetuating. Exclusive Jealousy. Polygamy. What I saw of Mormon. Turkish. MARRIAGE. Its only sphere. Defined. Divine. Creates families. Due to self and the other sex. All should multiply. When second marriages are and are not best. Mourning. CELIBACY. Evils. Causes. Excuses. Old maids. Ladies may choose and court. FOUNDING a family. Best time. Females determine it. The 18 year old fever. Differing ages. SELECTION. Life's casting die. GENERAL marriage prerequisites—constitution, parentage, health, industry, riches, looks, accomplishments, talents, music, scholarship, morals, disposition, habits, temperance, cousins, gender, &c. INDIVIDUAL adaptations. Superb children govern choice. Fitness and Love go together. Repulsions. Similarity the great rule. When dissimilar. Consumptives, insane, malformed, &c. What forms, temperaments, noses, &c., may, and must not marry, copiously illustrated. When differences improve. Perfecting the race. Phrenology helps select just right. Marital intelligence offices. Self intuition the final umpire. COURTSHIP. Has its science. Its two stages: Wrong spoils most marriages. Flirting. Wicked. Loving is marrying. Liberties kill Love. "Sorter courtin', and sorter not." Make Love in every day clothes. Sunday nights, &c. Presents. "Spatts." Sudden marriages. Dismissals. "Breaches." Eloping. Just how to conduct courtship. Long and short. Its pleasures. The love making secret. Proposal, acceptance, and vow. Keep Love pure. Assimilate. Prepare. Relatives. MARRIED LIFE. Wedding. Make it memorable. Honey-moon and annum. Home vs. boarding. Rules for the married. 1 Be the perfect man and woman. 2 Gentleman and lady. Differences. Praise vs. blame. Duty consorts. 3 Share interests, purse, knowledge, dormitory, everything together. Evils of not. 4 Mould and be moulded. 5 Make each other happy. 6 Court on through married life. Love vs. business. Cosy seasons. Family amusements. Model consorts. A perfect union. Discords. Amount. Causes. Cures. Bury old bones. DIVORCES. When allowable, and when not. Infidelity. Disease a consort. Jealousy. Drink. Jury of both sides decide. GENERATION. Infinitely more potential than education. The regenerator of the race. Sacred. The ultimate and controller of gender, Love and marriage. Its science, pleasures and power for good and evil. Stimulates every physical function. Exalts all the mental faculties. All its existing parental states stamped on offspring. What states improve and impair both. PLATONIC LOVE first. Most pleasurable. Promotes potency. In sympathy with the sexuality. Marrying one while loving another double adultery. Preparation, time, surroundings, &c. Between whom right and wrong. Out of wedlock. Passion essential. Who should cultivate and who restrain it. Participation due from and to both. Passion necessary in woman. Inspires man. Endows offspring. Her indifference hurts him, disorders her, and infuriates both. Her rightful control of her own person. She his passional governess. Plain talk to amorous husbands. Causes and cures of female passivity. Her love and passion go together. Fondling kindles, scolding kills both. Wife-scolding husbands fools and lunatics. Developing a wife. Frequency. Advice to those just married. Boys or girls as desired. ERRORS. Haste. Excitement. Contineny, promiscuity, mistresses, &c.—do they injure? Preventing conception. Large families, &c. BARRENNESS. Causes—inertia, aversions, nervousness, nymphomania, &c. Male structure. Office, &c., of each part. The life germ. Its wonders. How vivified and transferred. Collective position and action of all parts. Illustrated. THE FEMALE ORGANS. Illustrated. Mutual counterparts and adaptations. PREGNANCY. The placenta. All maternal states affect pro-genal character. Opposite traits in large families. Marks—how caused and prevented. Ishmael, Samson, Samuel, Mary, Bonaparte, &c. Pity bad children. What maternal states are best. Vitality, sleep, recreation, food, breathing, lacing, exercise, apparel, bathing, &c. Bearing paramount. Promotes health. BEST MENTAL states. What parts are formed in which months. How to produce orators, poets, authors, merchants, inventors, preachers, &c., at pleasure. Loving vs. hating babes before birth. Fear. Dropsy on the brain—how caused and cured. Sexual abstinence then. Need

of husband's sympathy. Signs. Natural labor easy, severe avoidable. E. lution. Watercure in child birth. Flooding. Bleeding, drugging, & Preserving the form. Diet. Lactation. REARING. Babes precious, Medicines. Worms. Scarlet fever. Bathing. Weaning. Clothes. " and year. The nutritive period till 7. The muscle-forming till 14. vs. Schooling. Precocity. GOVERNMENT. Loving vs. Punishing. App crush will, self-reliance, force, &c. Example better than precept. Each needs special Mother's Love the magic wand. IMPAIRMENTS. Amount of sexual decline and disease, vice and misery. Abortion. Poison. SECRET sins. Amount appalling in both sexes. Inflames. Exhausts. Benumbs brain and mind. Unsexes. Impairs marriage. Causes seminal losses, prematurity, &c. Enfeebles offspring. As bad as fornication. Signs. Abstain. PREVENTION. By knowledge. When learn? Mothers should warn. Ministers ditto. Conscience. Mothers and sons, and fathers and daughters, loving each other. Promote not ridicule children's loves. Affiliating with elders of opposite sex. BLIGHTED LOVE. Creates lust. Impairs menses. Causes ovarian dropsy, &c. Right Love cures all sexual ailments, and "the great evil." "Broken hearts" mended. Crucify old Love. Love again. Old Loves prevent new. New kill old. What shall married disappointees do? RESTORATION. Penitence. A sinning and repentant husband, and forgiving, happy wife. Love saves and restores. GIRLHOOD. Education ruins. Wrong and right merging into womanhood. Sexual inertia and starvation. Preserving chastity. Watched vs. self preserved virtue. How marriage cures sexual ailments. Hygiene. Mind cure. Impotency, inertia, prematurity, poisons, constipation, &c., self-cured. Local applications of water, electricity, &c. FEMALE complaints. Prolapsus. Visceral manipulations. Whites. Backache. Miscarriages. Menstruation promoted and diminished. Cause and cure of extra fat, short breath, &c. Nymphomania. Female turn of life. Advice to elderly women and men. Climates. FEMALE BEAUTY and bloom. Value. Made to last. What spoils and will renew. All right love states improve, all wrong impair, beauty of face, figure, and all other charms. Rules and directions for retaining and regaining sexual vigor. Our subject not exaggerated. A perfect sexual life. Concluding summary and appeal. No other subjects touch the soul life like these, sweeping whatever inner chords remain unpalsied. Find their complete "natural laws" exposition here, but *no where else*; and in their natural order.

PART IV. MAN'S SELF-CARING AND ELEVATING FACILITIES. Analyzes the animal propensities, and aspiring and artistical Sentiments which embody the great bulk of human interests, pleasures and labors; give the Analysis, Discovery, Description and Location, cultivation and restraint of Force, Destruction, Secretion, Acquisition, Caution, Application, Ambition, Self-esteem, Firmness, Sublimity, Ideality, Construction and Imitation, with observations on energy, punishment, death, commerce, political and personal economy, currency, insurance, railroads, care of self, policy, prudence, a good name, credit, fashion, style, aristocracy, domination, will power, dignity, perseverance. Scenery, beauty, taste, the fine arts, poetry, writing, theatricals, painting, drawing, arithmetic; cheap and good homes; the groundwall and octagon modes of building, &c. Home, its structure, fruits, flowers. Exterpating pests, roaches, bugs, rats, &c.

PART V. INTELLECT, MEMORY, REASON. Their analysis and culture. Memory is a most valuable possession. What annual rent could lawyers, business men, students, everybody, afford to pay to be enabled to recall all *they ever knew*? How many daily losses, consequent on a poor, would a good, convert into gain? A good education is worth over a poor? What pleasures surpass those derived from studying Nature, her laws, philosophies and facts. Reason and sense are still more so, while eloquence is no less. Mind controls matter. *Knowledge* is power. Understanding is man's constitutional governor and guide. Mental discipline is man's highest attainment and crowns all others. Admire the pleasures and powers of a strong and cultivated intellect, over a weak, dull one, and learn in Part V. how to realize them all. It analyzes, describes and shows how to cultivate and restrain Observation, Form, Size, Weight, Colors, Order, Computation, Locality, Eventuality, Time, Tune, Language, Causality, Comparison, Human Nature and Politeness; unfolds a greatly improved system of education, juvenile and personal; shows how to develop talents for arithmetic, eloquence, music, letters, logic, &c., cultivate the senses and improve any and every intellectual gift.

PART VI. MAN'S MORAL NATURE, GOD AND IMMORTALITY. By analyzing man's moral faculties, expounds his most eventful problems, and relations; proves the divine existence and attributes; immortality of the soul, and interrelations of this life with that to come, as follows: Man created with moral and religious factors. Located highest and supreme. Religion one of the natural sciences. WORSHIP. Its Analysis: Adores God, which proves His existence. Its duty, pleasures, restraints, benefits. Prayer. A luxury. How answered. Natural Theology. Promotes Worship. Men worship a God like themselves. His attributes, sects, creeds, revivals, &c., accounted for. A natural laws sect propounded. The *true* sect. Times for religious worship. The Sabbath. How to make children love religion. IMMORTALITY. Proofs. Relation to time, conditions and surroundings, Visions, Second sights, "ministering angels," Departed friends, Providences, Prophecies. "The light within." HOPE. Its description, culture and restraint. Expects, and this proves immortality. CONSCIENCE. Its office, location and effect on conduct, cultivation and restraint. Penitence, Punishment, here and hereafter. Pardon, Salvation, Death as affecting the Soul and Futurity. Christianity and Phrenology in perfect harmony. KINDNESS. Adaption, location, description, culture and restraint. An unequal duty and luxury. Doing good to man from love of God, the superlative virtue.

PART VII. PHRENOLOGY APPLIED. EDUCATION. Does not, yet should, conform to human nature. Is impractical, and unfits for life's struggles. The true scholastic system. Speech vs. text-books; and lectures vs. study as educators. Success in life and its conditions. Life's failures and their causes. How to do the most and best work possible. Working capacity almost exhausted. The author's experience touching health, work, &c. All Nature eternally progressing. Solar system. earth and each of her products. Survival of the fittest. How fruits, flowers, vegetables, &c., improve illimitably. Past and future progress of the race through each Faculty, from Amativeness to Causality. All its products. Every evil to be supplanted by its opposite Good. All discoveries to be carried down all time. Governmental progress, ditto religious, scientific, &c. Individual progress from birth to death. All faults and errors to be wiped out. All terrestrial self-improvement augments celestial forever. Four mental factors. 1. Experience and observation ever teaching God's laws and the benefits of obeying them. 2. Memory carrying all ever learned on with us forever. 3. Sense to sum up all experiences; and 4. Self-interest to compel us to seek all good and to avoid all pain, making all better and better eternally. Infinite and eternal happiness the finale of life.

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